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# LANDSCAPE MANAGEMENT

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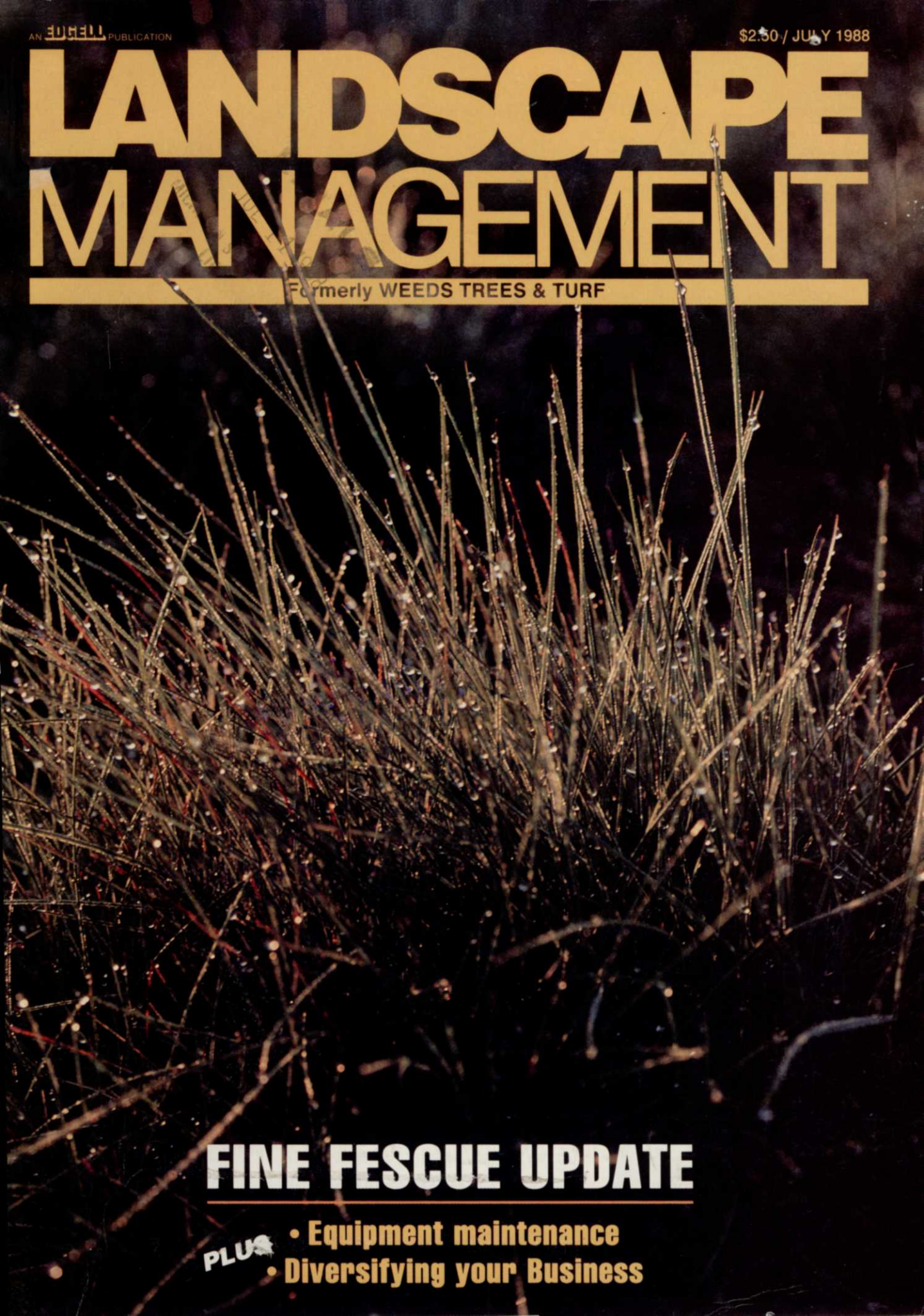

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- Diversifying your Business

*David Kroll, CGCS, inspects one of 18 PennLinks greens at Wilmington CC, Delaware*

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JULY 1988, VOLUME 27, NUMBER 7

# LANDSCAPE MANAGEMENT

Formerly WEEDS TREES & TURF

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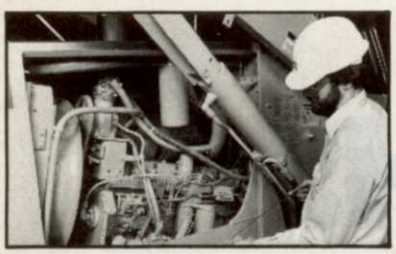

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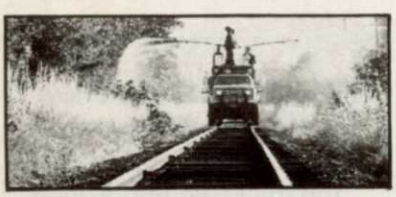

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Landscapers today find themselves in a more competitive market than ever before. As a result, 'diversification!' has become the cry of the '80s.


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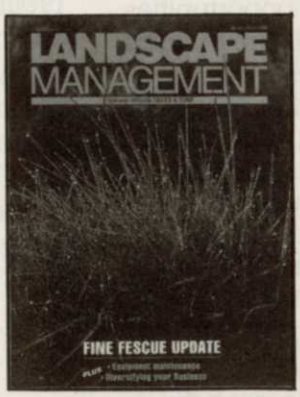


ON THE COVER: Dewey Fine Fescue by Larry Kassell

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Circle No. 140 on Reader Inquiry Card

## Drought rears its ugly head

■ A long, dry spring resulted in some radical water restrictions in Los Angeles lately. This type of action by the L.A. City Council could be a portent for other parts of the country hit by drought.

"A new ordinance provisionally passed by the City Council will establish strict xeriscape requirements for all landscaping on commercial, industrial and multi-family housing projects in Los Angeles," notes a press release from the California Landscape & Irrigation Council. The release says that points are awarded to xeriscaping features incorporated into the landscape. Each new site plan must meet certain requirements concerning drip/trickle/micro irrigation, automatic irrigation controls, swimming pool and spa covers, non-living ground cover and recirculating water features, among others.

California Gov. George Deukmejian, who drafted a contingency plan for a drought emergency, has requested the public to water lawns only during the evening or early morning.

And California is not the only place in the country facing a probable water shortage. LANDSCAPE MANAGEMENT technical advisor Doug Chapman says that spring rainfall measured less than one inch at Dow Gardens in Midland, Mich.—against a normal rainfall of more than four inches.

If spring weather is any indication, it will be a long, dry summer, so landscape managers should begin making their own "contingency plans" now.

## EPA official sees higher prices

■ The Environmental Protection Agency's requests for additional data on lawn care pesticides could result in fewer and higher-priced chemicals, says Cathleen McInerney, deputy chief at the Policy and Special Projects Office of the EPA.

"Producers may raise prices in order to compensate for the costs of generating additional data," she told attendees at the most recent GCSAA conference and show. "They may also simply stop making the product, or they may choose to take it off the home market and restrict it to golf courses and other non-home uses.

"Products containing active ingredients which are only registered for use on golf course would be unaffected by any new data requirements."

McInerney said that the EPA plans to issue 15 new pesticide registration standards and 10 final standards. She also predicted that this year, 13 special review decisions would be made.

Her speech also referenced biological control agents including nematodes and endophytic grasses.

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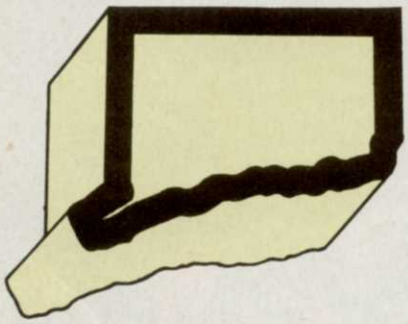
LEGISLATION

# Sign-posting, licensing laws in the books

Recent legislation in three states will have an effect on how pesticides are applied. The states—Connecticut, Maryland and Kansas—have restricted pesticide application in different ways. Here is a brief rundown on new laws facing pesticide applicators in those states:



### Connecticut

Anyone who sprays pesticides for non-agricultural purposes—including homeowners—will have to post warning signs. The law, passed by the state legislature in May, is expected to take effect in 1990.

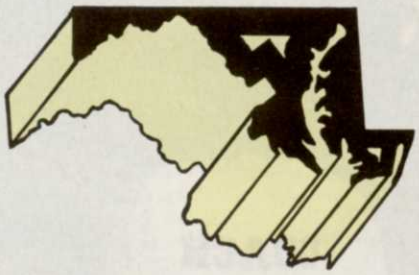
The law is probably the first in the country to be jointly supported by industry and environmental groups. "The parties have agreed on everything involving the posting," says Don Kiley, executive director of the Professional Pesticide Users of Connecticut.

Specific regulations are to be completed by the Department of Environmental Protection by Oct. 1, 1989.

Kiley says industry and environmentalists have agreed that 4x5-inch signs should be posted at conspicuous points of entry, with black letters on a yellow background reading: "Pesticide Application."

The name and phone number of the company or person doing the application would be on the back of the sign, and the property owner would be responsible for removing it after 24 hours.

The two groups also agreed that a registry of individuals who wish to be notified prior to applications should be established by the state. Pesticide applicators who spray abutting properties would then be responsible for notifying these individuals one day in advance. Applicators would be excused in the event of an emergency application.



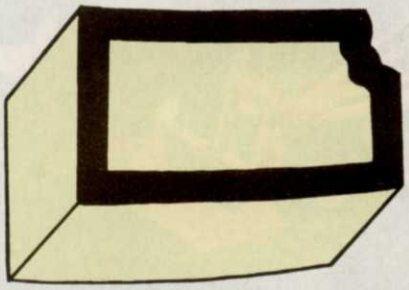
### Maryland

Mandatory sign posting, approved by the state legislature last year, will begin some time in July or August. The specific requirements were being finalized at the time this magazine went to press.

The requirements as they stand are almost identical to those in Massachusetts: LCOs must post 4x5-inch yellow signs with the image of a person walking with a dog, with black letters reading: "Pesticide Application, Keep Off."

One difference is that the customer is instructed to remove the sign after 48 hours, not 72 hours as in Massachusetts, says Mary Ellen Setting, an entomologist with the Maryland Department of Agriculture. The back of the sign must have the applicator's company and phone number.

Many companies began voluntary compliance this spring, Setting says. The law covers all commercial and government lawn and ornamental applications.



### Kansas

All who apply lawn care chemicals commercially for one year after Jan. 1, 1989 will have to be licensed. The legislature recently passed the requirement with the support of the Professional Lawn Care Association of Mid-America, according to Dave Murphy, association president.

Applicators will work their first year as registered technicians; they will receive verifiable training by a certified applicator. After one year, they will have to pass a test administered by the Department of Agriculture.

Kansas is one of a handful of states to require mandatory training of all lawn care applicators. The Professional Lawn Care Association of Mid-America is lobbying for a similar bill in Missouri.

Only handlers of materials in the "restricted-use" category, designated by the Environmental Protection Agency, require certification or supervision under the Federal Fungicide, Insecticide and Rodenticide Act.

Most lawn care chemicals do not fall under this category.

*—Lawn Care Industry*

PESTICIDES

# It's official: Daconil innocent

On May 9, nearly five years after the fact, Daconil fungicide was cleared of any complications in the death of Navy Lt. George Prior.

Judge Paul S. Sheridan, Circuit Court of Arlington County, Va., dismissed the $16 million lawsuit against Diamond Shamrock and the Army/Navy Country Club for the death. The suit was filed by Prior's widow, Liza, who claimed Prior died as a result of Daconil exposure.

"We're pleased with the judgment in this case as it relates to our product, Daconil 2787," says Ed Sabala, manager of corporate communications for Fermenta Plant Protection, which presently manufactures Daconil.

**Daconil**

Prior, 30, died in September of 1982 of *toxic epidermal necrolysis* (TEN), a rapidly progressive and often fatal disease, 14 days after playing golf on the

*continued on page 11*

**PRIOR** *from page 8*

Army/Navy Country Club golf course. The course had been sprayed with Daconil.

The case has been repeatedly touted by anti-pesticide activists as proof that lawn pesticides are dangerous.

"We've just been beaten up by it so many times in the media," says Steve Hardymon, spokesman for ChemLawn Services, Columbus, Ohio. "We're just happy to have it behind us."

Adds Jim Wilkinson, executive director of the Pesticide Public Policy Foundation: "This is just one thorn out of our sides. Wherever we go, they're (activists) always referring to it."

Greg Richards was working for a lawn care company in Washington, D.C., where Prior lived, in 1983 when the suit was filed. Richards, now product manager at Lesco Inc., remembers that the suit was featured prominently in local media.

Customers, understandably concerned, would ask them if they used Daconil, Richards says.

"It just takes a tool away from some of these environmentalists who have been pounding away at it for years and years," Richards says. "The case was used as a reference against all pesticides."

"There is no question in my mind that Daconil was in no way related to Lt. Prior's death," notes Robert Arthur, the lead defense attorney. He summarized the two sides' arguments.

For the plaintiffs, Dr. Lord said he determined, through infrared photography, that Daconil was present on Prior's golf balls, clubs and shoes, as well as the golf course. He said Prior had been plagued by unusual health complaints after playing on the course.

Arthur says two other doctors supported Dr. Lord's conclusions but offered no investigation of their own: Dr. Kenneth Chase, an internal medicine specialist, and toxicologist Ruth Shearer, Ph.D.

Two of the defense witnesses took issue with Dr. Lord's method of determining Daconil was present on the grass at the time Prior played.

Samuel Goward, Ph.D., an expert in infrared photography, said the quality of the photography was too poor to determine any type of chemical was present. Keith Flohr, a chemist, said the fluorescence revealed in Dr. Lord's photos could not be known to be that of Daconil, but healthy grass.

ACADEMIA

# Students and city cooperate on training with industry reps

A number of turf and tree care companies joined forces with Paul Smith's College last summer to educate urban tree management students, while also beautifying the streets and parks of Plattsburgh, N.Y.

The program was developed by college urban tree management coordinator Grove Katzman and teaching assistant Harry Pearsall. Under the program, industry representatives provided a wide variety of demonstrations and lectures to the students, who then practiced what they learned in the real-life laboratory of this northeastern New York municipality.

James Fenstermacher of ChemLawn, Malcolm Johnson of the S.V. Moffett Co. and Dave de Sousa of the F.A. Bartlett Tree Expert Co. conducted seminars and field training. Also lending a hand was Dave Armstrong of the Niagara Mohawk Power Corp.

"Everybody benefits," believes Katzman. "It's a hands-on training exercise that allows our students to gain practical experience while being involved in a very positive project."

Practical demonstrations were held at the Plattsburgh municipal beach, Bailey Avenue and West End parks and a local golf course.

"This is something that's never been done before," Katzman continues. "It's new and it's different. Although a tremendous number of problems are involved, there is also a great opportunity here to really accomplish something."

**Jim Fenstermacher of ChemLawn points out weed problems to UTM students in Bailey Avenue Park. Photo by D. Czuprynski.**

LEGISLATION

# Landscape board puts halt to threatening legislation

California landscapers certainly can't control the amount of water that falls from the sky. But when government attempts to restrict their business, they move.

California is in the grip of its worst drought since 1977 (see "News/Trends"). Consequently, the East Bay Municipal Utility District (EBMUD) in the San Francisco area announced plans to impose stringent water control measures to minimize the crisis. EBMUD's proposal included water rationing programs and a ban on all landscaping projects until the rains return. Period.

*continued on page 12*

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**CALIFORNIA** *from page 11*

The idea of waiting until winter to resume work, however, didn't sit well with the state's highly-organized landscape industry. Instead, they joined forces and were able to head off many of the strong actions EBMUD was considering.

The architect of the industry's counter-offensive is Chet Sarsfield, owner of Irrigation Technical Services of Lafayette, Calif. He is an active member of several state organizations, including the California Landscape Contractors Association (CLCA), American Society of Irrigation Consultants (ASIC), American Society of Landscape Architects (ASLA) and the Northern California Turfgrass Council (NCTC).

"When the problem came about (early March) we just got together and talked about it," says Sarsfield. "Several of us volunteered our time, called together some meetings and decided to do something about it."

Representatives from the Northern California Landscape Architects, California Association of Nurserymen, Northern California Gardeners Federation, Irrigation Association, and sod growers also are on the board.

The 15-member group, dubbed the Green Industry Landscape Advisory Board, went to work. Armed with a five-hour presentation that covered everything from an overview of the impact of EBMUD's proposed solution to a lesson in irrigation and landscape design, the group was able to get EBMUD to back away from its early, severe proposals to adopt a more compromising position.

California landscapers, instead of being banned from working or at least paying ferocious water rates, will instead be using water-tolerant plant materials and postpone the laying or planting of turf until the drought subsides. In addition, EBMUD announced its intention to use the board as an advisory group available for consultation on a continuing basis.

Sarsfield says that in addition to serving EBMUD, the group will undertake a campaign to educate water companies, nurseries, even homeowners throughout the area about proper irrigation and water use.

"I think this group is unique in this country," adds Sarsfield, "and successful too."

MAINTENANCE

## Calibrating equipment increases profitability for Landscapers

Calibratring spreaders, sprayers and other instruments you use to distribute pesticides and fertilizers will increase your profitability, says Bruce Augustin, Ph.D. at Lesco, Inc., Rocky River, Ohio.

Landscape managers at the Turfgrass and Landscape Institute meeting in Anaheim recently heard Augustin offer the following advice on calibrating various equipment.

*Hydraulic, engine-powered sprayers.* Before determining the application rate of these devices, make sure all its nozzles are the same type, find out if they feature 10- or 20-inch spacing and if they are all at the same specified height. Also, take into consideration your spraying pattern: are you moving at 3 or 4 miles per hour during application; are there any manipulations of the sprayer you can use to increase efficacy or safety?

Use a calibrated measuring cup to determine the amount of sprayed material you're going to apply. Then, depending on the spacing of the nozzles, measure a course area (410 sq. ft. for 20-inch spaced nozzles and 205 for 10-inch) and see how long it takes to travel that length at a determined tractor speed.

Place a collection cup beneath one sprayer nozzle for the same amount of seconds it would take to cover the

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IMPORTANT: Please remember always to read and follow carefully all label directions when applying any chemical.

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**CALIBRATION** *from page 12*

above-mentioned distance. The number of ounces you collect are equal to the number of gallons you're applying per acre.

*Spray nozzles.* Measure a 1000-sq. ft. area (40×25 feet) and spray it with a known amount of water in the same manner you would spray in the field.

When the area is sprayed, you know your application rate per 1000 sq. ft. This allows you to adjust to the sprayer's walking speed to meet the desired application level.

Augustin also recommended using a new meter introduced by Great Plains Industry that measures flow rate. It fits on a spray gun and gives a direct reading of gallons per minute.

**Augustin**

"Many of these techniques apply across the board. They're very fundamental," said Augustin. "Your livelihood depends on efficient, economical application, and by properly calibrating sprayers and spreaders, you'll definitely help control your costs and make yourself more profitable."


Get a different view of mowing.

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DISEASES

## Isolating a 'new' patch disease

A number of years ago, a patch disease appeared on the turf scene that displayed all the classic characteristics of other patch diseases.

It would occur suddenly, producing distinct patches and rings in the turf. Turf crowns and roots were usually both involved with an ectotrophic fungi.

The disease's response to various fungicides differed, especially to sterile inhibitors such as Bayleton and Rubigan. The fungicides had an unpredictable, inexplainable effect.

This disease, though similar to fusariam blight, didn't match up, notes Gayle Worf, Ph.D., a turfgrass pathologist at the University of Wisconsin. In looking at the crown of the plant for its health, there was evidence of a dark ectotrophic fungus that was proven to be doing damage to the crown.

Diagnosis showed symptoms of the disease included an abundance of the dark fungi in the crown and root and elimination of other possible causes of the stressed appearance of the turf such as drought.

Researchers isolated the organism and worked to demonstrate its pathogenicity. The isolation separated the disease from summer patch and the new disease was named: necrotic ring spot.

Worf found that various cultural practices helped to control or enhance the disease. Higher fertility enhanced the disease though thatch had no effect.

He found that turfgrass varieties strongly affected the disease's onset and severity and recovery potential from disease. "Few if any varieties are completely resistant," Worf states, "but some are worse than others. Rye blends do very well."

LEGISLATION

## ACA members urged to fight insurance plan

The American Cemetery Association (ACA) is urging its membership to fight proposed legislation that will require employers to cover their employees working 17½ hours per week or more under a comprehensive health benefits plan.

The bill, S. 1265, was introduced by

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# If it's not Certified Manhattan II, it's not 'such a deal' after all.

## Some dealers are offering you a deal to take something they call Manhattan off their hands

### THE REAL BAG

Manhattan Ryegrass Growers Association has the exclusive contract to produce Manhattan and Manhattan II perennial Ryegrasses. These select seed growers have not produced the old Manhattan strain for years, so much of what is being produced as Manhattan is probably not true Manhattan.

The improved *certified* Manhattan II, co-developed by Dr. Bill Meyer at Pure Seed Testing and Dr. C. Reed Funk has significant improvements over the old Manhattan ... like rust and disease resistance, darker green color and better plant density.

So what is their stuff? We *know* it bypasses seed certification and royalty programs. And, because it's not certified, we have no way of knowing just what's in the bag.

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Qualified turf associations can earn cash for turf research by saving Manhattan II blue tags. Contact your dealer for details.

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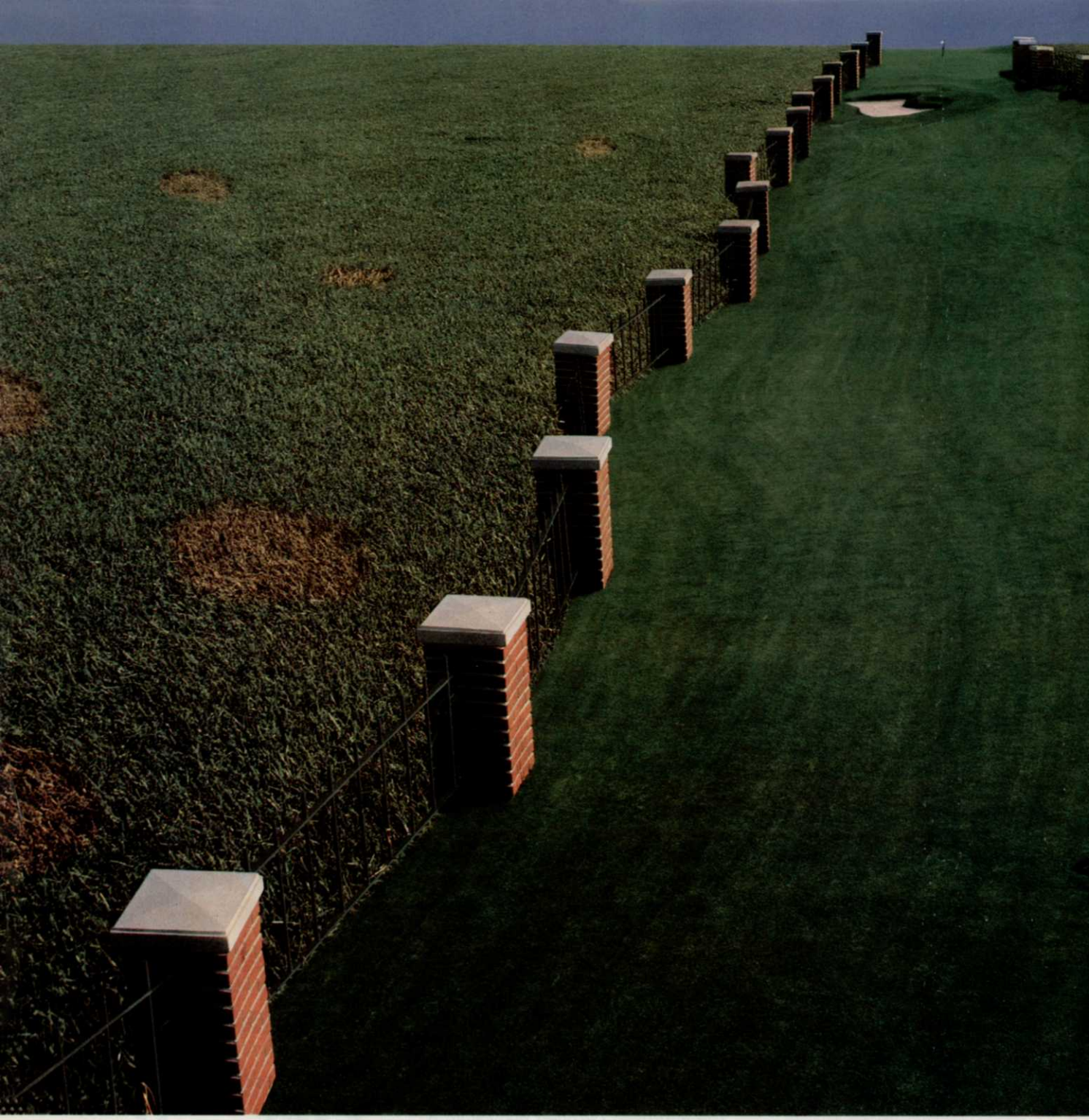
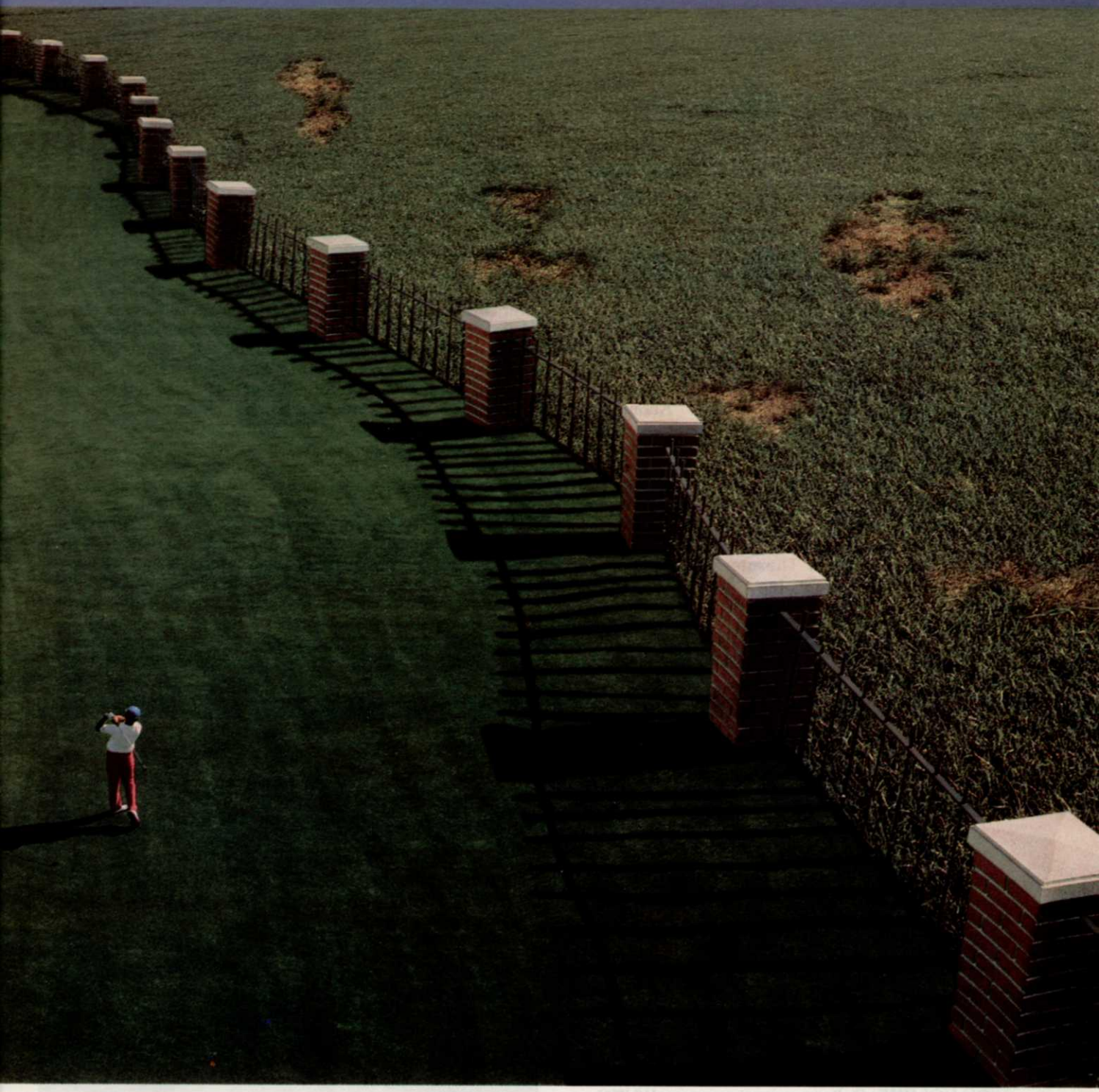


# Keep your fairways looking great.

44061



Golfers love to play on beautiful fairways. It's that simple. Which is why it's so important to keep your course in top shape. That means controlling diseases like dollar spot and anthracnose. And that means a program using BAYLETON® fungicide.

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Senator Edward Kennedy (D-Mass.). It requires employers to pay about 80 percent of the cost of health premiums. This will cost employers $27.1 billion a year, says the government, assuming coverage is purchased through indemnity rather than managed care plans.

The ACA is asking its members to send Mailgrams to their senators that state your opposition to the plan. Make your message short and to the point, refer specifically to S. 1265, and thank the senator for help in defeating the bill, says the ACA.

AWARDS

## Software, creator earn award nominations

"Slice," a computer system developed for the landscape and nursery industry, and its creator, Gary Thornton, have been nominated to receive awards from the International Data Base Management Association.

Thornton, president of Thornton Computer Management Systems in Cincinnati, is nominated to receive the Association's Technical Achievement Award while "Slice" is one of four programs nominated for the "Most Innovative" category.

Nominations were made at the third annual Pro-Gramme Awards Presentation in Anaheim, Calif.

INSECTS

## Brazilian fly tackles mole crickets

A red-eyed Brazilain fly was recently released in a Florida pasture in an attempt to control spreading mole cricket damage. The effort was reported by Tom Walker, Ph.D., entomologist with the mole cricket control project at the University of Florida's Institute of Food and Agricultural Sciences in Gainesville.

About the size of house fly, *Euphasioptrex depleta* comes to the mating call of mole crickets and lays her living larvae on or near the singer. The larvae then burrow into the male and mate.

"Ten days later, the mole cricket is dead," says Walker. "The larvae come out, pupate and start all over."

Exotic mole crickets, whose tunnels brown-out golf courses, lawns and commercial turf operations, came from South America, probably in the sand ballast of ships. "The flies belong to a group of 20 fly species that only parasitize crickets, mole crickets and katydids," adds Walker. "Mole crickets are not that abundant in Brazil. This is one of the organisms that keep them in line."

RESEARCH

## Biological amendment shows promise in studies AT MSU

Studies conducted at Michigan State University in 1987 showed that monthly applications of Bio Control from KLM Bio Systems reduced "disease expression" of necrotic ring spot and summer patch on Kentucky bluegrass and annual bluegrass.

Necrotic ring spot reduction was significant after three or four applications, according to research conducted by graduate student Brad Melvin and plant pathologist Joe Vargas, Ph.D.

Studies on test plots at the Hancock Turfgrass Research Station in East Lansing also showed the plant growth hormones and microbes in Bio Control reduced thatch in Kentucky bluegrass compared to untreated check plots. The pathogens of both diseases


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studied are known to survive in thatch.

CORRECTION

## Chart, captions were reversed

In the May issue of LANDSCAPE MANAGEMENT, two captions and two colors on a disease control chart were reversed.

In the article "Diseases of Cool-Season Turf," which began on page 48, the disease identified as necrotic ring spot was actually take-all patch and vice versa.

Colors in the disease calendar on page 50 were also reversed. The chart is reproduced correctly on page 58 of this issue.

The magazine regrets any inconvenience to author Noel Jackson, Ph.D., or any of its readers.

INDUSTRY

## Monsanto buys 'Clipper' TGR

Monsanto Agricultural Co. has made an agreement with ICI Americas whereby it gains exclusive U.S. distribution rights to ICI's Clipper tree growth regulator.

The regulator extends tree trimming cycles so that electric utility companies can trim less often.

Clipper is injected through small holes drilled into tree trunks. It slows the growth of a variety of deciduous and broadleaf evergreen trees without adversely affecting flowering.

RESEARCH

## ASPA doles out $6,800 for research

The American Sod Producers Association (ASPA) reported distributing $6,800 in grants to four researchers who are assessing the environmental impact of turfgrass and sod.

ASPA grants went to Thomas L. Watschke, Ph.D., Penn State University for his study *The Effects of Turfgrass Establishment on Water Quality*; J.B. Beard, Ph.D., Texas A&M, *A Quantitive Assessment of the Benefits From Irrigated Turf on Environmental Cooling and Energy*; Henry T. Wilkinson, Ph.D., University of Illinois, *The Use of Pseudomonas Flourescens to Increase the Efficiency of Water Absorption by Bluegrass*; and A. Martin Petrovic, Ph.D., Cornell University, *Effects of Turfgrass Management on Ground Water Quality and Water Use*.

*continued on page 28*

# SHORT CUTS

**THE RIGHT STUFF...**Pilot Field, the new home of the Class AAA Boston Bisons minor league baseball team, is made of the right stuff. That is, real grass. Bison president **Robert E. Rich Jr.** notes: "When we conceived the initial design for Pilot Field, we made sure of two very important details. We wanted the sun to shine on our fans, and our players to play on natural grass." The field, sodded last fall, contains a mixture of Victa, Bristol and Merit Kentucky bluegrasses with 10 percent Pennfine perennial rye. The field's irrigation system was designed by Toro Irrigation and installed by the John W. Danforth Co. Others involved in completing the field were **George Terzian** of Star Landscaping, **Jim Hornung** of Elber's Landscaping and **Gerald Rothenberger** of Cowper Management. Also, Comiskey Park's **Roger Bossard** served as a consultant.

**PUSHING SOD...**The American Sod Producers Association has updated its publication "Guideline Specifications to Turfgrass Sodding." It is divided into five sections: subsoil preparation; topsoil material; fertilizer, pH correction materials and final soil preparation; sod materials and transplanting; and maintenance. For more information, contact the ASPA at 1855-A Hicks Rd., Rolling Meadows, IL 60008; (312) 705-9898.

**BARK WITH BITE...**The National Bark & Soil Producers Association has just released the 1988 issue of its Bark & Soil Product Index. The index lists major suppliers of 14 different bark and soil products (from mulch and nuggets to professional soil mixes, peat and potting soil) and another 30 industry service suppliers. It is available free of charge to landscape contractors, nurserymen, garden centers, landscape architects and other businesses. For your copy, write the NBSPA, 13542 Union Village Circle, Clifton, VA 22024 or call (703) 830-5367.

**YOU, THE CEO...**The Associated Landscape Contractors of America has released the seventh in its series of in-depth reports about the industry entitled "Leadership in the Landscape Industry: the Changing, Challenging Role of the Chief Executive Officer." The report examines the CEO's role, explores his position in an evolving business and details his relationship with middle management. The report's cost is $5 for non-ALCA members and $3 for members. Write: Publications Dept., ALCA, 405 N. Washington St., Falls Church, VA 22046.

**THE BEST COURSE?...**Superintendent **Mike McBride** received nothing but compliments from touring pros for the shape he had Muirfield Village Golf Club in for the Memorial Tournament May 23-29. **Greg Norman** said the Dublin, Ohio course was "perfect." Tournament host and participant **Jack Nicklaus**, who developed the course, also praised his superintendent. However, he had to enjoy the course from the CBS broadcast booth on Saturday and Sunday. He missed the cut.

# BOOKSTORE

**010 - ADVANCES IN TURFGRASS PATHOLOGY**
*by Joyner and Larsen*
Leading U.S. turf pathologists report on turfgrass diseases, pythium blight, snow molds, fairy rings, leaf spot of Kentucky bluegrass in Minnesota, initial and field fungicide screening, turfgrass disease resistance, etc. Contains new ideas on how to combat turfgrass problems. **$27.95**

**220 - CONTROLLING TURFGRASS PESTS**
*by Shurtleff, Fermanian, Randell*
New comprehensive guide provides the most up-to-date information available on the identification, biology, control and management of every type of turfgrass pest. Covers weeds, insects, animal pests and diseases in detail. Also provides information on cultural management practices: the establishment, care and renovation of low-, medium-, and high-maintenance turf areas. 50 color and 400 black and white photographs. **$32.00**

**230 - LAWNS-Third Edition**
*by Dr. Jonas Vengris and Dr. William A. Torello*
Designed as a textbook or a practical usage manual, this book has been completely brought up-to-date. Care of lawns and turfgrass, from selection of varieties to maintenance of established grass is completely covered. **$25.95**

**645 - MANAGEMENT OF TURFGRASS DISEASES**
*by J.M. Vargas*
Identifies turfgrass diseases by description and illustration. Includes a holistic approach to healthy turf and lawns. Presents practical management strategies for golf courses, lawns and athletic fields. 204 pages, illustrated. **$26.70**

**640 - TURF IRRIGATION MANUAL**
*by James Watkins*
A guidebook for engineers, architects, designers and contractors. Keeps pace with the latest developments in turf and landscape irrigation. Specific chapters devoted to rotary sprinkler design systems. Golf course design systems and expanded engineering and reference material. **$26.55**

**225 - TURFGRASS MANAGEMENT**
*by A.J. Turgeon*
Revised edition. Covers the latest developments in turfgrass science and technology. Heavily illustrated with dozens of new drawings. Provides specific recommendations for applying the newest pesticides, fertilizers and other materials to combat turfgrass problems. A valuable reference for diagnosing problems and determining their causes. **$39.33**

**615 - TURF MANAGEMENT FOR GOLF COURSES**
*by James Beard*
Written by an eminent turfgrass researcher, this USGA sponsored text is an ideal reference and "how to" guide. Details all phases of golf course design and construction, turf management, course administration, irrigation, equipment and disease and pest control. Fully illustrated. **$52.75**

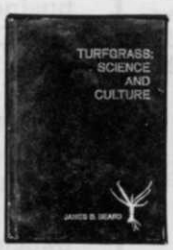
**620 - TURF MANAGEMENT HANDBOOK**
*by Howard Sprague*
Practical guide to turf care under both healthy and poor turf conditions. Chapters cover turf in cooler and warmer regions, fertilizer use, regular turf care, weed and disease control and special turf problems. Useful seasonal schedules for management of turf areas. **$25.25**

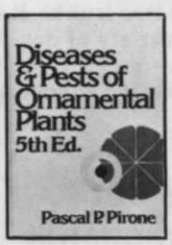
**110 - TURF MANAGERS' HANDBOOK Second Edition**
*by Daniel and Freeborg*
ENTIRELY UPDATED. A practical guide for the turf practitioner. Chapters on grasses, growth regulators and diseases have had extensive modification. Innovations resulting from research and practice have been added to reflect the current techniques available for turf managers. Offers recommendations for effective turf protection through integrated pest management. Included are alternate plans for providing and improving safe, uniform turfgrass for sports fields. Outline format plus newly added index make this new edition easier to use and a more comprehensive approach to turfgrass science. **$32.95**

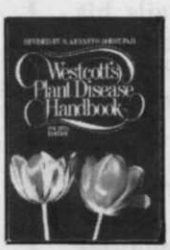
**630 - TURFGRASS: SCIENCE AND CULTURE**
*by James Beard*
Comprehensive basic text and reference source used in many leading university turf programs. Includes findings of current research compiled from more than 12,000 sources. **$39.00**

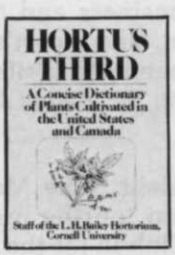
**410 - DISEASES & PESTS OF ORNAMENTAL PLANTS**
*by Pascal Pirone*
This standard reference discusses diagnosis and treatment of diseases and organisms affecting nearly 500 varieties of ornamental plants grown outdoors, under glass or in the home. Easy to understand explanations of when and how to use the most effective fungicides, insecticides and other control methods. **$36.50**

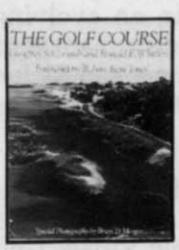
**690 - INSECTS THAT FEED ON TREES AND SHRUBS**
*by Johnson and Lyon*
Essential information for identifying more than 650 insect pests and the injuries they cause. More than 200 color illustrations. **$49.50**






**570 - WESTCOTT'S PLANT DISEASE HANDBOOK**
*by Kenneth Horst*
This fourth edition offers professionals the latest diagnostic and disease control information. Plant entries designed to simplify diagnosis, plus background on the classification of plant pathogens. This handbook gives a specific description of each disease, susceptible plants, specific symptoms of the disease, reported locations and control measures for each disease and their side effects. **$43.95**

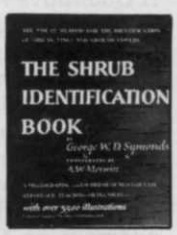
**510 - HORTUS THIRD**
*from Cornell University*
A 1,300 page concise dictionary of plants cultivated in the United States and Canada. A reference which every horticulture professional should have. **$125.00**

**800 - THE GOLF COURSE**
*by Cornish and Whitten*
The first book ever to give the art of golf course design its due, and golf course architects the credit and recognition they deserve. 320 pages and 150 color and black and white photographs. Traces the history and evolution of the golf course, analyzes the great courses, shows how they were designed and constructed. **$35.00**

**665 - ARBORICULTURE: THE CARE OF TREES, SHRUBS AND VINES IN THE LANDSCAPE**
*by Richard W. Harris*
Provides comprehensive coverage of complete planting, site analysis, preparation and special planting methods, fully detailed coverage of fertilization, irrigation and pruning guidelines on preventative maintenance, repair and chemical control, how-tos of diagnosing plant problems, practical data on non-infectious disorders, diseases, insects and related pests and pest management. **$52.00**

**410 - NATIVE TREES, SHRUBS, AND VINES FOR URBAN AND RURAL AMERICA**
*by Gary L. Hightshoe*
This award-winning reference to native U.S. plants has now been expanded to include shrubs and vines. Over 250 major species are characterized by form, branching pattern, foliage, flower, fruits, habitat, soil, hardiness, susceptibility, urban tolerance and associate species. Includes unique color-coded keys that classify plant species by visual characteristics, cultural requirements and ecological relationships. **$79.95**

**720 - SHRUB IDENTIFICATION**
*by George Symonds*
Pictorial key to identify shrubs. Contains more than 3,500 illustrations to check specimens. Popular and botanical names are given for each shrub and handy index tabs for quick reference. **$12.95**

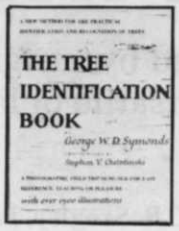


# BOOKSTORE

**750 - TREE IDENTIFICATION**
*by George Symonds*
Pictorial reference to identifying trees by checking leaves, buds, branches, fruit and bark. Like its sister publication, SHRUB IDENTIFICATION, popular and botanical names are listed with index tabs for easy reference.
**$14.95**

**760 - TREE MAINTENANCE**
*by Pascal Pirone*
The fourth edition of this guide for anyone involved in the care and treatment of trees. Special sections on tree abnormalities, diagnosing tree troubles, non-parasitic injuries and assessing the suitability of different trees. **$49.95**

**405 - WOODY ORNAMENTALS**
*by Partyka, Joyner, Rimelspach, Carver*
Illustrates plant identification characteristics. Organized in two basic sections: plant identification and plant disorders, this text utilizes 430 color photos, 430 line drawings and 45 black and white photos to simplify identification.
**$32.50**



**345 - COST DATA FOR LANDSCAPE CONSTRUCTION 1988**
*Kathleen W. Kerr, Editor*
An updated unit cost data reference for designers and cost estimators. Developed to fill the tremendous need for detailed landscape construction cost data. Laid out in easy-to-use CSI format. Annual.
**$35.00**

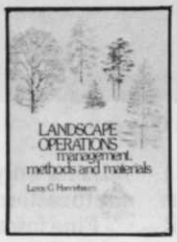
**300 - LANDSCAPE DESIGN: A PRACTICAL APPROACH**
*by Leroy Hannebaum*
Geared for the commercial designer/salesperson, this is a one-stop guide to the landscape design process. Covers the entire highly competitive field including design analysis techniques, pointers on land forms, specialized business landscaping methods, environmental design guidelines, specifications, estimations, bids. **$37.00**

**305 - LANDSCAPE MANAGEMENT**
*by James R. Feucht and Jack D. Butler*
Planting and Maintenance of Trees, Shrubs, and Turfgrasses. Describes the basic principles of cultural management of installed landscapes. The important factors of plant growth, soils and fertilizers, improved planting techniques and new pruning techniques, integrated pest and disease management, and spray-equipment calibration and care are all featured. **$29.95**

**370 - LANDSCAPE OPERATIONS: MANAGEMENT, METHODS & MATERIALS**
*by Leroy Hannebaum*
An in-depth examination that combines technical training in landscape science with methods of accounting, business management, marketing and sales. Discusses effective methods for performing lawn installations, landscape planting and maintenance. Step-by-step accounting calculations are explained in simple terms. **$34.00**

**365 - LANDSCAPE PLANTS IN DESIGN**
*by Edward C. Martin*
An annotated photographic guide to the design qualities of ornamental plants and their aesthetic and functional use in landscape designing. Over 600 trees, shrubs, vines, ground covers and turfgrasses are described in nontechnical language. Over 1900 photographs. Provides a basis for selecting the best plant materials for any particular use in landscape design. Contains detailed indexes that provide quick reference to particular design qualities and growing conditions. **$58.95**

**375 - RESIDENTIAL LANDSCAPES**
*by Gregory M. Pierceall*
An excellent reference for individuals involved in the design and development of plantings and constructed features for residential sites. Illustrations and actual residential case study examples are used to communicate graphic, planning and design concepts which are the focus of this text. **$41.00**



**565 - WEEDS**
*by Walter Muenscher*
Second edition. Premier text for identification and basic natural history for weeds found in the continental United States and Canada. Ecological data on weed biology combined with excellent keys and plant descriptions make this an essential reference book.
**$39.95**

**125 - SCIENTIFIC GUIDE TO PEST CONTROL OPERATIONS**
*by Truman, Bennett, Butts*
Provides a sound basis for studying the technical aspects of pest control. Covers pesticides, safety, health and environmental concerns, equipment, flies and mosquitos, rats and mice, birds and much more. **$35.00**

**500 - THE 1988 PESTICIDE DIRECTORY**
*by Lori Thomson Harvey and W.T. Thomson*
A Guide to Producers and Products, Regulators, Researchers and Associations in the United States. For the person who needs to know anything in the United States pesticide industry. Includes Basic Manufacturers and Formulators with their products, key personnel, managers, district/regional offices and other pertinent information. For United States pesticide information in one place, this directory is a must.
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COVER STORY

# WHY FINE FESCUES ?

Frequently overlooked by turfgrass managers, fine fescues are among the most adaptable and versatile of lawn grasses, as research from Rhode Island proves.

*by C.R. Skogley, Ph.D., University of Rhode Island*

**Seed for chewing fescue is grown in Oregon.**

In 1984, this magazine presented a series of articles on turfgrasses. In one article under this byline, it was noted that fine fescues were an under-used group of grasses. This is particularly so, as improved varieties continue to become available to us.

The wide range of adaptation and versatality of fine fescues remains impressive today. They grow from coast-to-coast in the temperate regions of the United States and Canada, and from central Italy through Scandanavia in Europe. They do well in the Mediterranean climate of Italy and France, on the sand beaches of Belgium and the cold, windy prairie provinces of Canada. They have long been major components of turf stands in the cool humid northwest, throughout the British Isles and the northeastern region of the U.S.

At least 35 species of the genus (fescue) have been identified throughout the U.S., and some species are found in the wild in nearly every state of the union. The fine fescues used for turfgrass purposes are creeping red fescue *Festuca rubra* L subsp. *trichophylla* Gaud.), spreading fescue *F. rubra* L. subsp. *rubra*, chewings fescue *F. rubra* L. subsp. *commutata* Gaud.), hard fescue *F. longifolia* Thuill.) and fine-leaved sheeps fescue *F. tenifolia* Sibth.) Red fescue and sheeps fescues are reportedly found in 35 or 40 of the 50 states. One or the other appear to be missing only in the south-central and southeastern states.

Fine fescues differ greatly from their related species, tall fescue, *F. arundinacea* Schreb. and meadow fescue, *F. pratensis* Huds. The latter are course-textured grasses with different climatic and cultural requirements.

All fine fescues are relatively fine-bladed and will tolerate mowing to 1½ inches or less, are adapted to both sun and shade and are tolerant of rather acid, infertile and dry soils. They have been used as turfgrasses since the beginning of lawn culture.

## Tender loving care

Until the mid-1900s, lawns were penerally not pampered. They seldom received much fertilizer nor were they generally irrigated. This held true also for most golf course fairways and other extensive turf areas. Under these conditions the fine fescues were often abundant in turf stands in many areas of the United States—particularly in the temperate regions having acid soils or a maritime climate. Fine fescues were particularly adapted to areas where soils were infertile and or of light texture.

With the advent of increasing fertilization and irrigation, these grasses decreased in popularity and, when once abundant, ceased to be a major component of turf stands. It might be said that these grasses could not stand "prosperity." It was not immediately clear why they backed off under increasing levels of maintenance.

It took years to determine that diseases, primarily leafspots, were a major factor in lose of fescues. For many years this loss was not particularly disturbing as improved Kentucky bluegrass and, then, turf-type perennial ryegrasses were entering the market. As long as inexpensive fertilizer and water could be supplied, these grasses were very adequate replacements. Fine fescues became known primarily as shade grasses or for use mainly in low-fertility situation.

Until the release of Merion Kentucky bluegrass in the 1950s, all available turfgrasses were essentially of "common" type. They had not been selected or bred specifically for turfgrass purposes. Even though named varieties were being marketed, the names most often related to their area of production or to a particular type that developed in the producing area.

The release of Merion opened many eyes to the potential for breeding superior turf-type grasses, and the search for more improved turfgrasses was immediately begun.

## Fine fescue on trial

In 1960, trials were established at the Rhode Island experimental station that included Merion, two experimental bluegrasses and five common bluegrass varieties. In the same trial were seeded five common fine fescues and one experimental, R.I. No. 6 (eventually released as Jamestown). The purpose of this study was to evaluate the performance of those grasses when fertilized with one, two or three pounds of N/1000 sq.ft. annually—relatively low rates in that era.

One outstanding result from this trial was the observation that a fine fescue could provide equal or better quality turf than even the best Kentucky bluegrass, at each level of fertility. This was the first indication that the potential existed for "improved" fine fescues.

Regional turfgrass research trials were initiated within the 13 northeastern states in 1968. That year, sepa-

# Fine Fescue Defined

## What are Fine Fescues and why are they so important to turf managers?

Our Fescue turfgrasses are part of most every park, golf course, industrial campus, athletic field, condominium commons and home lawn from the transition zone, Northward.

But, many people are not aware of that. Perhaps we are the most overlooked turfgrass in existence.

We feel that Fine Fescues are the best turf investment a grounds manager can make. And, we'd like to point out *why.*

Fine Fescues are *real* grass. And, as with all living things, there is give and take. Sure, our Fescues take water and some maintenance, but they are better *givers.* Our natural grass turns noxious gases into oxygen and is a natural air conditioner for turf users.

We feel that while artificial turf has its place on locker room floors, it has no business where *real* people work, play and relax. Our grass is just *naturally* more refreshing.

Our Chewings (Festuca rubra commutata) and creeping red (Festuca rubra rubra) Fescues are rather unique when compared with other turfgrass species. Although they have most of the features of other cool season grasses, Fescues have several distinct benefits worth noting.

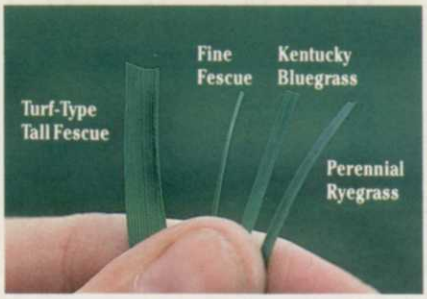
*Fine Fescues are low maintenance.* Our varieties require less fertilizer and water than other species. That's a big *plus* at today's water, fertilizer and manpower prices.

*Fine Fescues fare well around trees.* It seems our grass doesn't need as much sunlight, water and nutrients as other turfgrass species. Because Fescues don't compete with trees for these important elements, they're called *shade grass.* Our Fescues don't creep into flower beds, nor crowd out other species in a mixture.

And, because they're Oregon grown, our Fescues germinate, adapt and perform better than imported types.

## You'd expect to pay a fortune for such a turfgrass, but Fescues are quite reasonable

Why don't Fescues cost a great deal? Fine Fescues have been around a long time and have been changed very little. Why mess with a good thing? While other former "pasture" species are coming closer to looking like our old standard; receiving notoriety for their "improvements" and enjoy the price increases associated with the word "new," our Fescues have continued what they do best . . . support the up-and-comers. But then, Fine Fescues were meant to be stepped on.




## Fine Fescues are Ideal for Recreation, Sports and Leisure

Not only do Fine Fescues excel alone or in perennial ryegrass/Kentucky bluegrass mixtures on horizontal playing surfaces; Fescues are excellent for low maintenance areas like berms, roadside banks, ski slopes and hilly spots that don't retain moisture. So, you see, Fescues are ideal all-around grasses for *all around* your recreation and sports facility. Their low maintenance requirements offer *turf managers* a chance for a little more leisure . . . and there's nothing wrong with that.

For a series of nine tech sheets on Oregon grown Chewings and creeping red Fescues, call or write:

**Oregon Fine Fescue Commission**
2140 Turner Road SE
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503/585-1157

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rate Kentucky bluegrass and fine fescue trails were seeded at several locations throughout the region. The trails contained 55 cultivars of Kentucky bluegrass and 24 fine fescues. All grasses were evaluated at mowing heights of 1 ½ and ¾ inches and were fertilized at the rate of three to four pounds of N/1000 sq. ft. annually.

These trials were continued through 1973. Results from this study were most encouraging for fescue grasses.

Evidence of superior performance by selected, improved varieties, over common varieties was clear. Chewings varieties such as Atlanta, Halifax, Highlight and Jamestown were clearly superior to commonly available varieties, and the chewings type generally performed better than the creeping or spreading types. Some of the better varieties performed well even at the ¾-inch cutting height, which was not expected.

Subsequent variety trails of fine fescues have led to a number of conclusions:

**1.** Improved varieties of chewings and hard fescue, particularly, are far superior to common varieties. They are more disease resistant, will tolerate closer cutting and will provide excellent density in pure stand.

**2.** Hard fescues establish more slowly than chewings fescue but seem to be more tolerant of heat, moisture and salt stresses. They will tolerate higher fertility usage.

**3.** Most fine fescues are prone to summer disorders and possible injury *if fertilized during periods of summer heat stress.* It appears that, if they are to be fertilized, cooler spring or fall periods would be best.

**4.** Fine fescues, once established, do not require much fertilizer. They are adapted to lower fertility soils and perform best under low fertility management programs. They develop deep, extensive, root systems and are very efficient in moisture and nutrient acquisition.

**Table 1**

**Quality ratings of the top three cultivars of perennial ryegrass, fine fescue and Kentucky bluegrass cultivars in evaluation trial, 1979-83.**

| | 1978 General Variety Trial<br>5 Year Turf Quality Ratings | | | | | | |
|---|---|---|---|---|---|---|---|
| Cultivar | May | June | July | Aug | Sept | Oct | Ave |
| Perennial Ryegrass | | | | | | | |
| Dasher | 7.0 | 5.6 | 5.0 | 5.1 | 6.0 | 7.1 | 6.0 |
| Blazer | 6.4 | 6.1 | 5.1 | 5.0 | 6.0 | 6.8 | 5.9 |
| Fiesta | 6.5 | 5.8 | 4.8 | 4.6 | 5.4 | 6.6 | 5.6 |
| | | | | | | Overall Ave: | 5.8 |
| Fine Fescue | | | | | | | |
| Jamestown | 7.7 | 7.1 | 6.6 | 6.5 | 7.2 | 7.1 | 7.1 |
| Luster | 7.4 | 6.8 | 6.5 | 6.2 | 6.6 | 7.5 | 6.8 |
| Scaldis | 7.3 | 7.1 | 6.7 | 6.4 | 6.1 | 6.6 | 6.7 |
| | | | | | | Overall Ave: | 6.9 |
| Kentucky Bluegrass | | | | | | | |
| Ram | 4.7 | 5.5 | 5.7 | 4.6 | 4.4 | 4.7 | 4.9 |
| I-13 | 5.6 | 6.2 | 6.0 | 5.7 | 5.3 | 6.3 | 5.9 |
| Harmony | 3.7 | 4.5 | 5.1 | 4.8 | 4.5 | 5.2 | 4.6 |
| | | | | | | Overall Ave: | 5.1 |

* Turf Quality Ratings: 9 = best quality
1 = bare ground or dead turf

## Adding versatility

Sod producers in New England generally used as much as 50 percent creeping red fescue, in combination with Kentucky bluegrass, as a seeding mixture until the mid-1970s. The addition of the fescue provided a more versatile product. The sod was more widely adapted to sun or shade and infertile areas as well as fertile soils.

Creeping red fescue was not competitive with vigorous bluegrasses, however, and often at sod harvest very little fescue was evident.

With the availablity of improved cultivars of chewings fescue many growers are currently using them with their bluegrasses, but at a reduced rate. Because fine fescues establish more rapidly than does bluegrass, and chewings fescue is capable of profuse tillering, 10 to 15 percent of seed, by weight, appears to be adequate.

In a study of Kentucky bluegrass and red fescue cultivars at the Rhode Island station in 1970, it was evident that rerooting of transplanted sod was faster when fine fescues were combined with Kentucky bluegrass. Each fall at the research farm, new turfgrass cultivar trails are seeded. These trails include potentially improved selections and several standard varieties for comparisons of Kentucky bluegrass, perennial ryegrass, tall fescue and fine fescues.

The trials are maintained for at

**Table 2.**

**Quality ratings of the top three cultivars of perennial ryegrass, fine fescue and Kentucky bluegrass cultivars in the evaluation trial, 1981-85.**

| | 1980 Variety Trial<br>5 Year Turf Quality Ratings | | | | | | |
|---|---|---|---|---|---|---|---|
| Cultivar | May | June | July | Aug | Sept | Oct | Ave |
| Perennial Ryegrass | | | | | | | |
| M 456 | 5.7 | 5.8 | 4.8 | 5.6 | 6.1 | 6.0 | 5.7 |
| HE 139 | 6.1 | 5.2 | 5.1 | 5.4 | 5.5 | 5.7 | 5.5 |
| Ranger | 5.7 | 6.0 | 5.0 | 6.1 | 5.6 | 6.2 | 5.8 |
| | | | | | | Overall Ave: | 5.7 |
| Fine Fescue | | | | | | | |
| HF 20 | 6.5 | 7.8 | 6.9 | 7.3 | 7.4 | 7.4 | 7.2 |
| Scarlet | 6.1 | 6.7 | 5.5 | 6.8 | 7.3 | 7.5 | 6.7 |
| Atlanta | 6.2 | 7.1 | 6.5 | 7.0 | 7.1 | 7.6 | 6.9 |
| | | | | | | Overall Ave: | 6.9 |
| Kentucky Bluegrass | | | | | | | |
| HV-72 | 5.1 | 6.1 | 6.0 | 7.0 | 6.3 | 6.2 | 6.1 |
| HV-54 | 5.0 | 6.1 | 5.7 | 6.6 | 6.5 | 6.3 | 6.0 |
| HV-71 | 5.1 | 6.5 | 6.2 | 6.5 | 6.3 | 6.0 | 6.1 |
| | | | | | | Overall Ave: | 6.1 |

*Turf Quality Ratings: 9 = best quality
1 = bare ground or dead turf

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**Table 3.**

**Quality ratings of the top three cultivars of perennial ryegrass, fine fescue and Kentucky bluegrass cultivars in the evaluation trial, 1982-85.**

| | 1981 Variety Trial 4 Year Turf Quality Ratings | | | | | | |
|---|---|---|---|---|---|---|---|
| Cultivar | May | June | July | Aug | Sept | Oct | Ave |
| Perennial Ryegrass | | | | | | | |
| Repell | 5.6 | 6.0 | 4.7 | 5.3 | 5.6 | 5.6 | 5.5 |
| Yorktown II | 5.2 | 5.4 | 4.6 | 5.3 | 5.7 | 5.9 | 5.4 |
| Prelude | 5.7 | 5.8 | 4.7 | 5.4 | 5.9 | 5.8 | 5.6 |
| | | | | | | Overall Ave: | 5.5 |
| Fine Fescue | | | | | | | |
| Reliant | 6.5 | 7.2 | 5.7 | 6.9 | 7.2 | 7.1 | 6.8 |
| Waldina | 6.6 | 7.6 | 6.0 | 7.3 | 7.4 | 7.2 | 7.0 |
| Jamestown | 5.4 | 6.5 | 5.0 | 6.1 | 6.6 | 6.5 | 6.0 |
| | | | | | | Overall Ave: | 6.6 |
| Kentucky Bluegrass | | | | | | | |
| Mystic | 4.4 | 6.1 | 5.2 | 6.4 | 5.7 | 5.5 | 5.6 |
| Ram I | 4.0 | 5.6 | 4.8 | 6.1 | 5.7 | 5.3 | 5.3 |
| Baron | 3.3 | 5.0 | 4.4 | 5.3 | 5.5 | 5.9 | 4.9 |
| | | | | | | Overall Ave: | 5.3 |

*Turf Quality Ratings: 9 = best quality
1 = bare ground or dead turf

least five years during which time performance date are obtained. The grasses are mowed at a 1 ½-inch height, watered as required and weeds and insects are controlled. Fertilizer is applied to provide about three lbs. of N/1000 sq. ft. annually. All plots are observed and rated for quality during the first 10 days of each month throughout the growing season, April through November.

For the purpose of comparing quality of the fine fescues with Kentucky bluegrasses and perennial ryegrasses, records of larger trials established in 1978, 1980, 1981 were checked. The five-year monthly and seasonal averages of quality ratings for the three cultivars of each species that exhibited the highest quality throughout the five-year period were recorded.

The data retrieved are presented in Tables 1, 2 and 3. It should seem obvious why we are so high on the fine fescues. In all three trials, the quality ratings of the fine fescues are considerably above those of perennial ryegrass and Kentucky bluegrass.

With the introduction of improved fine fescue varieties, this has generally been the case. Although early improvements were primarily among chewings cultivars, hard fescues started to make their presence known in the early 1970s and excellent varieties of both are currently being marketed.

The 1985 progress report of the National Fine Leaf Fescue Test established in 1983 clearly shows the fine turf potential of hard fescues. There are 47 entries in this test. The 1985 report includes data from 19 locations nationally. One sheeps, 14 creeping and spreading, nine hard and 21 chewings cultivars are compared. Performance scores averaged during the second year of the trial (1985) showed seven hard, one sheep and two chewings fescues among the top 10 cultivars.

Although creeping red fescue has great potential and value and is widely used successfully, markedly improved varieties have yet to be developed. Considerable work is under way to provide improved varieties of this grass.

Each species of fine fescue has distinct characteristics, attributes and adaptations. Some of them now contain an endophyte which apparently provides biological control of certain surface-feeding insects. There is also variation in disease resistance and shade tolerance. Certain varieties will tolerate closer mowing than others. Because of this variability, it may be advantageous to use blends of fine fescues for certain uses.

Where very close mowing is required, as on overseeded greens or golf course fairways, chewings and hard fescue would perform best. In higher cut areas such as roadsides or golf course roughs, creeping red fescue would be the species of choice.

At a time when we are more environmentally aware and are attempting to reduce dependence on fertilizer, pesticides and water, the fine fescues have much to offer. **LM**

**NEWS** *from page 21*

EQUIPMENT

## Danger of ATVs require caution

All terrain vehicles (ATVs) may present a risk of severe injury or death in certain circumstances, warns Tommy Valco, an agricultural safety engineer with the Texas Agricultural Extension Service.

Valco says the Consumer Product Safety Commission recently sounded a safety alert concerning these vehicles, saying that more than 900 people, including many children, have died in accidents associated with ATVs since 1982; many people have become paralyzed or suffered severe internal injuries as a result of accidents associated with ATVs; and thousands of people are treated in hospital emergency rooms every month for injuries received while riding an ATV.

"You and your employees should be aware that an ATV is not a toy and may be dangerous to operate," says Valco. "An ATV handles differently from other vehicles and can roll over on the rider or violently throw them without warning. Even hitting a small rock, bump or hole at low speed can upset it."

Because of the grim statistics, Valco adds, the U.S. government has filed a lawsuit against all manufacturers and distributors of ATVs asking the court to declare the vehicles hazardous and that additional regulations to protect ATV riders be established.

INSECTS

## Monitoring flowers can save you money

Nurserymen who monitor their flowers for pests may reap substantial cost savings, says Harvey A. Yoshida, a doctoral student at the University of California, Riverside (UCR).

Monitoring enables flower growers to detect, evaluate and record pest populations and trends, Yoshida says. He reminds landscape managers that even small numbers of some pests can ruin the aesthetics of many floricultural crops.

Monitoring also enables growers to evaluate the effectiveness of their pest control programs, not to mention save the nursery money by enabling nurserymen to determine when and at what levels insecticides should be used.

Yoshida recommends combining visual walk-throughs with the use of an insect trap system, such as blacklight traps, pheromone traps, and yellow sticky traps, in order to make good management decisions about pest control.

Where to place the traps depends on the type of pest present, but, in general, Yoshida recommends one blacklight trap per 5,000 sq. ft.; one pheromone trap and one yellow sticky trap per 10,000 sq. ft.

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# ENGINE IRREGULARITIES

Armed with a few simple facts, your field-level employees can often isolate minor engine problems before they grow into expensive major breakdowns.

*by John Peterson*

The engine is the heart of any piece of outdoor equipment. Keeping it in good working condition helps maintain the equipment's overall efficiency.

Although many engine problems can be complex and require a trained mechanic to repair, the field operator can often detect irregularities that indicate when a major mechanical failure is developing. With a few simple facts and a few extra minutes, the operator can often isolate these minor problems before they become more expensive.

### Before startup

The morning equipment inspection is the first line of defense in diagnosing potential engine problems. It should start with a walk around the vehicle, checking for puddles, which can indicate leaks in any one of a number of systems. Also, check engine surfaces for unusual amounts of fluid and try to trace them.

For example, if the piston rings are worn, several drops of oil will appear around the blow-by pipe. Normally, the area at the end of the pipe will be covered with oil-soaked dust. If the engine has excessive blow-by, oil may be washing the dust away. A compression check will determine if the rings have worn to a point that engine efficiency is affected.

After a visual inspection for leaks, check the oil. Unexpectedly low levels are another indication of a leak that needs attention.

To check for both fuel and coolant in the oil, a simple test can be conducted on a weekly basis. After running the engine for five minutes to get the oil warm, pull out the dipstick and put a drop or two of oil on a paper towel. Unless the oil has been changed in the last few hours, a dark circle surrounded by a lighter, less distinct, ring will appear. The inner circle is oil and the outer ring is diesel fuel, which is thinner than the oil and spreads faster on the paper towel.

The fuel ring should be a thin halo around the oil. A fuel ring twice the diameter of the oil circle indicates there is enough fuel in the crankcase to start interfering with the oil's lubricating effects.

Although some fuel seepage into the oil is normal, too much before a scheduled oil change may indicate a leak in the fuel system.

Prolonged idling at low speeds also causes fuel dilution. If this is the case, the engine will not warm up enough to expand the rings and the resulting poor rings-to-cylinder sealing will lead to lower compression, allowing more unburnt fuel and oil to mix.

Milky-looking oil may indicate a leak in the cooling system. This can be verified by opening the oil pan drain plug slightly and catching the drippings in a cup. Since antifreeze (even mixed with water) is heavier than oil, it will separate from the oil and a blue or green color will appear. Again, have a mechanic address this problem immediately.

The next step in the daily inspection is to check fan and alternator belts. Try to turn the fan or alternator cooling fins by hand while the engine is not running. The resistance offered by the engine should make these components difficult to move if the belt is properly adjusted and in good condition. If you suspect a belt is loose, run the machine five or 10 minutes and then check the temperature of the pulleys. If belts are loose, the pulleys will be hot.

A quick visual check can detect slippage on a standard V-belt, as the sides of the belt will be glazed from wear.

After inspecting the belts, look for loose hoses or hose clamps.

Next, check the air filter. Many have warning indicators to show that the filter is clogged. If this is the case, have it replaced or cleaned.

The morning equipment inspection should also include an inspection of systems that are related to the engine. Often a minor malfunction in one of these systems may appear to be a major engine problem but is, in fact, far less serious.

Here is a brief list of other systems that should be inspected before startup:

*continued on page 32*

**Unexpectedly low oil levels are a sign that a leak needs attention. Excessive oil use or very dirty oil is a cause for concern.**

Peterson is a service engineer at JI Case in Racine, Wisc.

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**ENGINE** *from page 30*

● Check the fuel filter drains. If fluid does not drain and the weather is cold, water in the fuel pump or line may have frozen. If the temperature is above freezing, there is probably a blockage in the fuel system. Check the fuel filters to see if they are clogged with dirt.

● Check to make certain that fuel shutoff valves are open at the tank. Mechanics occasionally forget to reopen these valves after working on a unit, causing operators to crank an engine that is getting no fuel.

● Check the cooling system. Is it at the proper level when cool? If there is an overflow tank, is it at the proper level indicated on the tank?

● Check the antifreeze. It should be bright green or blue in color. If it is rusty or dirty, it may need changing.

● Check the radiator fins to see if they are clean and undamaged. Debris in the radiator fins will reduce the efficiency of a cooling system considerably and can cause engine overheating.

● Run a quick visual check of the wiring, looking for dangling, frayed wires.

While this seems like a long complicated process, it actually takes only five to 10 minutes, and it should become a part of an operator's routine.

### Engine startup

Most engine problems can be diagnosed during the pre-start check or within five minutes of starting and operating the machine. Strange noises or unusual-looking smoke are common warning signs.

If the engine does not turn over at all, check to see if the master disconnect switch is deactivated.

If this is not the problem, check the battery by turning on the unit's lights and turning over the starter. If the lights dim excessively, the battery may be low, or electrical or ground connections may be corroded. A good ground connection is as important as the positive battery cable connection. Check all ground straps.

If the engine cranks, but still will not start, it can mean the battery needs recharging or that the connections to the battery are corroded. In cold weather, it might be a sign that engine oil is too thick.

If the engine turns over easily in the cold, but is not starting, try cranking for 30 seconds. Then let the engine rest for 30 seconds and try again. Batteries work better when warm, and cranking heats them up quickly. A brief cranking also heats the air in the engine, which seals the rings and creates better compression.

If the engine still will not start, do not continue cranking. This can burn out the starter. Re-check fuel lines and fuel tank valves. If you are still unable to find any reason the engine will not start, call a mechanic.

If the engine misses after starting, call a mechanic immediately. This can indicate a serious problem such as a faulty injector valve, a piston problem or a blown head gasket. Although the engine will work when firing poorly, unburnt diesel fuel seeping down the cylinder walls washes the oil off the pistons, which can cause serious damage.

### Exhaust fumes

One of the best indications that an engine is running properly is the color of the exhaust fumes. Under normal idle conditions, the engine should emit only a slight haze. Under load or acceleration, some black smoke is normal because of less efficient fuel burning.

Here is a review of what an operator can learn from the color of exhaust fumes:

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*continued on page 34*

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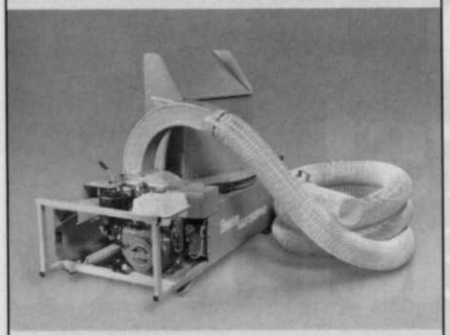

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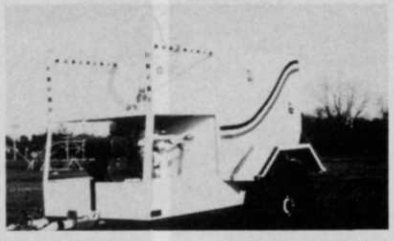

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**ENGINE** *from page 32*

● **Blue smoke**: During idle, this means oil is seeping past the rings or the intake seal on a turbocharger. Some is normal, but excessive amounts of blue smoke signal problems requiring a mechanic's attention.

● **Black smoke**: This usually means the air to fuel mix is too rich and too much fuel is going unburned. This is often caused by a dirty air cleaner or the air filter being blocked by leaves, debris or even a rag. Occasionally, a mechanic will increase fuel to oil mix to increase power. This will give temporary results, but will eventually destroy the engine.

● **White smoke**: A small amount is normal during cranking. This indicates that the invectors and fuel pump are delivering fuel to the cylinder but combustion is not taking place.

● **Misty, white smoke**: This is often visible at the initial startup. In large amounts it may be a sign that abnormal amounts of coolant are entering the combustion chamber due to a blown head gasket, cracked head, cracked block or cracked sleeves. These problems will also cause bubbles in the radiator while the engine is running. This situation requires immediate attention by a mechanic.

● **Gray smoke**: Often an indication that engine compression is too low, gray smoke usually results from broken sealing rings, burnt valves, a cracked engine block, etc. It requires a mechanic's immediate attention.

## Power loss

If an operator notes a steady loss of power over time, it may indicate an engine problem. However, such a power loss is just as likely to be caused by other factors. Here is a checklist of possible causes *not* related to the engine:

● **Changed operating conditions**: Wet, muddy conditions will drastically alter the performance of many machines. In fact, mud packed in the tracks of a crawler dozer, loader or excavator can require at least 30 hp more to drive than clean, dry tracks. Solve this by loosening the tracks in muddy conditions and using open grouser pads.

● **Tracks too tight**: A mechanic may have overtightened tracks, which will overwork the machine and require more horsepower.

● **Tracks too large**: Some users put larger-than-recommended tracks on a machine, thinking it will increase traction. To an extent, it does, but it also demands more horsepower from the engine. The rule is to not try to make a machine do more than it is built to do.

● **Blades or buckets too large**: Using blades and buckets larger than recommended for the equipment reduces overall performance. Refer to the manufacturer's requirements to make sure the machine is not being overloaded.

● **Wrong gear**: Running a piece of equipment in third or fourth gear in a situation where first or second gear is required will result in inefficiency.

● **Hydraulic lever not in neutral**: If a hydraulic lever is not in the neutral position, the machine will probably be difficult to start because the starter is forced to turn over both the engine and a loaded hydraulic pump. Putting the lever in neutral should solve the problem.

These are simple points, but in a surprising number of cases, they will isolate the problem. If not, there is a three-step test to further track the source of the power loss.

First, run the engine at full throttle with the transmission and all hydraulics in neutral. Accelerate to maximum rpm. If maximum rpm is not attainable it may be nothing more than a clogged fuel or air filter inhibiting the engine's operation. Locate and correct the problem.

Second, if engine rpm is normal, isolate the hydraulics. Actuate a valve (for example, loader up) and hold it open until the function has reached its limit. At this point, the oil will be deadheaded, causing the main relief valve to open. This will demand greater horsepower. Normally a drop of 100 to 200 rpm will occur. If the hydraulic system pressures are set too high there will be a drop of more than 200 rpms.

Finally, if the unit passes the second test, put the transmission in high gear and, with the hydraulics in neutral, engage the parking brake (this can be done only if the equipment has a torque converter). Go to full throttle. The engine should drop 200 to 400 rpm. If it drops more, the problem then lies with the engine, not the hydraulics.

Throughout the process, watch the exhaust stack to obtain additional information about fuel burning, water or coolant in the system, etc.

If the machine passes all three steps in this test, there may be a problem with the power train or transmission, or it may be an indication of locked brakes or tracks that are too tight.

These sample tests will detect many engine problems. As a result, the small amount of extra time spent checking out equipment in the field can save thousands of dollars in repair bills and make more efficient, effective use of construction equipment. **LM**

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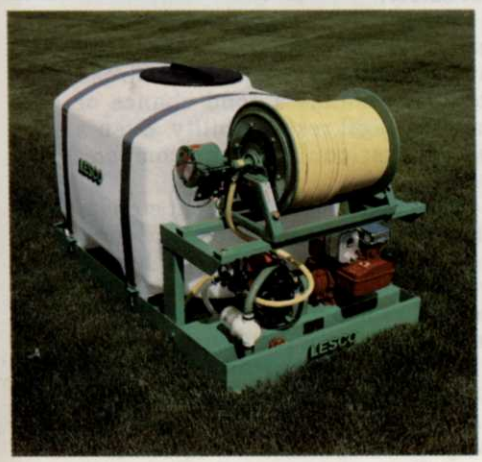


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Determine your savings by combining discounts for the month you order and the month you pay. The LESCO Equipment Early-Order Program ends February 28, 1989.

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# SAFE TRACK RECORD

Keeping train tracks clear serves more than purely aesthetic purposes. It can save lives.

Vegetation management along rights-of-way is an essential part of complete rights-of-way management. As with roadsides, this holds true for railways. Keeping plant material under control serves a number of purposes and is done in a number of areas.

### The yard

Vegetation control begins in the rail yard with bare ground as the goal. This is done for two reasons. First and foremost is the safety of employees. Killing the plants removes potential stumbling blocks to workers and reveals hazardous areas so that they can be avoided or corrected.

Secondly, removing vegetation from the yard promotes improved drainage. Getting water away from the surface reduces the chances of wood railroad ties rotting, which reduces danger and replacement costs.

Since the control is non-selective, herbicides such as Roundup are ideal for this task.

### Mainline spraying

Spraying serves several purposes along main track lines. First, aesthetically, it's just better looking. Also, it promotes better drainage, needed for the same reason as in the rail yard: to keep the wood from rotting out.

Lastly, spraying controls vegetation on the berm or shoulder of the tracks. This keeps the weeds and grass from overtaking the tracks and making them hazardous for passage or closing them entirely.

### Burning bridges

Bridges also need to be cleaned up for one very basic reason. If there is a fire, the bridge is less likely to burn down. Vegetation is non-selectively removed from head walls and embankments to reduce the risk of a fire contributing to the bridge's destruction.

### Signal lines

Selective herbicide applications are made around signal or communication lines to keep them clear but also to leave some plant material to control erosion.

**Spraying pesticides from booms mounted on trucks or railroad cars is one of the most efficient ways of controlling rail-side vegetation.**

A similar scenario exists where roads cross the tracks. High vegetation must be controlled, so low-growing vegetation is desirable.

In the South, this task is made easier by the existence of Bermudagrass. Since this species is anything but an upright grower, it is ideal for crossings. Controlling weeds and brush while leaving the Bermuda behind is feasible with selective herbicide application.

This is somewhat of a problem in the North, though. There is no cheap, low maintenance, low-growing grass species that is cold-tolerant, too.

Still, it is essential to keep the crossings free of high vegetation—for aesthetics, yes, but more importantly for safety.

If a crossing presents a hazard because vegetation blocks visibility and an accident results, the railroad company stands a good chance of holding legal responsibility. Even a bad lawyer could get the company cited.

This is generally sufficient motivation to control vegetation. The railroad company usually has a vegetation engineer who develops the control program, which is then contracted out to a private business.

Programs vary with each contract and not all of the areas stated above are addressed in a contract. However, what is done is what's necessary to keep the tracks open and safe. **LM**

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**Sterling Farms superintendent Greg Wojick (left) and assistant Peter Cavanaugh needed six years to convert fairways to 90-95% perennial ryegrass.**

# PUTTING POA IN ITS PLACE

Successful annual bluegrass control requires sound chemical and cultural practices, along with some understanding from the golfers.

When Greg Wojick became superintendent at Sterling Farms Golf Course in Stamford, Conn., six years ago, the fairways were a catch-all mixture of turf varieties. But the dominant species was *Poa annua*.

"It was nerve-wracking," says Wojick, "because poa just doesn't want to live in the summertime." Now that he has predominantly perennial ryegrass fairways, Wojick sleeps a lot better at night.

Wojick is one of many golf course superintendents in the northern U.S. trying to rid their fairways of what most consider the biggest problem they face. *Poa annua*—or annual bluegrass—is a profuse seeder which germinates in the fall, overwinters in a dormant state, and resumes activity in late winter/early spring, before most perennial cool-season turf species begin growing. Once established, poa succumbs to stress caused by warm temperatures, moisture, disease and insects.

It often dies out completely during summertime. When this happens, the fairways resemble "one of those Army camouflage trucks you see on the highway," says Wojick. But seed begins to germinate again when weather cools down and continues germinating in flushes until winter dormancy sets in.

The trend toward lower fairway mowing heights in recent years has contributed to the problem since *Poa annua* produces seed and remains competitive at lower cuts. Excessive short mowing, combined with shallow irrigation and use of large maintenance equipment, creates an ideal situation for the shallow-rooted annual bluegrass to flourish.

## Ecological niche

In short, poa seems to have found its ecological niche on golf course fairways. "Only two other species can stand up to the stress of lower cuts—perennial ryegrass and bentgrass," says Bruce Branham, Ph.D, assistant professor in the Department of Crop and Soil Sciences at Michigan State University. "But most of the older courses have Kentucky bluegrass fairways and if they've lowered cutting heights, they're mostly annual bluegrass."

Though annual bluegrass forms a dense, tight, upright turf and can be a

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**Foreman Bill Lockwood applies a pesticide to one of Sterling Farms' greens, upon which 65,000 pairs of feet trod per year.**

good golf playing surface, the species is plagued with poor agronomic qualities, making it an expensive turf to maintain.

"I've talked to superintendents who spend over a thousand hours hand-watering their *Poa annua* fairways," says Branham. "And, in a difficult year, many superintendents exceed their chemical budgets just spraying fungicides on annual bluegrass."

Branham advises superintendents wishing to control poa in their fairways to use a combination of chemical programs and cultural practices that favor bentgrass or ryegrass. Among the cultural controls he recommends are:

**Removing clippings.** Clippings contain thousands of seeds, so removing them reduces opportunity for reinfestation.

**Using lightweight equipment.** *Poa annua* flourishes in compacted conditions. Switching to lightweight equipment such as triplex mowers will reduce compaction and favor growth of desirable species.

**Deep, infrequent irrigation.** Keeping the course on the dry side encourages growth of deeper-rooted varieties. However, Branham adds, this measure is easier in theory than in practice.

**Delayed spring fertilizer application.** By applying a later treatment, superintendents avoid giving annual bluegrass a boost before perennial ryegrass starts growing.

**Using chemical controls.** "Because *Poa annua* is a winter annual, it germinates in the fall and spring, but primarily in the fall," says Branham. "This means you must have a pre-emergence herbicide in place in the fall.

"The problem is that poa, unlike other grass weeds such as crabgrass, is also a perennial. So every time you have a herbicide failure, you could have 10 to 30 percent conversion to annual bluegrass on your fairway. It doesn't die each year as do annual weeds. This also explains why conventional pre-emergence programs don't work against annual bluegrass."

In his research on annual bluegrass, Branham also has tried plant growth regulators. He has found them to provide sporadic control at best. They cause discoloration to desirable species and work very gradually.

However, Branham has had very promising results in his research trials with Prograss EC Herbicide from Nor-Am. Because Prograss has both pre-emergence and post-emergence action on annual bluegrass, the product both prevents seed from germinating and controls seedling or established plants.

"No matter how good your pre-emergence herbicide is, you'll always have some escapes with it," says Branham. "The beauty of Prograss is that it provides pre-emergence action and picks up those escapes. The timing of Prograss applications is ideal, too.

"While you may see some discoloration from the treatment, it's later in the year, when not as many golfers are playing."

Prograss may be used on ryegrass, Kentucky bluegrass or fairway-length bentgrass with no adverse effects on the desirable species. Rates and timing vary depending on the tolerance of the particular species.

Greg Wojick first used Prograss on a half-acre Par 3 fairway in 1984. He had been overseeding with ryegrass for two years and had a 40 to 60 percent stand. He sprayed Prograss in early August, overseeded two weeks later, and sprayed again a week later.

"The results were astounding," says Wojick. "First the poa got very sick and the turf was thin on that fairway. But after we overseeded, the ryegrass filled in the gaps and everything looked great. It convinced my management that we should go with Prograss on all 18 fairways the next year."

For the last three seasons, Wojick has sprayed one gallon of Prograss per acre on all fairways, followed by an overseeding of 400 to 500 pounds of perennial ryegrass per acre. His second Prograss application is made a month after the first treatment. He now has a 90 to 95 percent stand of ryegrass on all fairways.

## Ryegrass instead

Wojick decided to seed ryegrass instead of bentgrass because he wanted permanent grass as quickly as possible. With 65,000 rounds of golf played yearly, Sterling Farms is one of the busiest golf courses in Connecticut. He felt ryegrass would handle the wear-and-tear very well.

Not only is it less nerve-wracking, he adds, but ryegrass is less expensive to maintain. Whereas he previously sprayed fairways with fungicides six times a year, he only treated four times in 1987. He also waters less, practicing the deep, infrequent irrigation recommended for good ryegrass stands.

He applies 3 lbs. of nitrogen per acre per year, and maintains pH at 6.0-6.5 with lime treatments. "Now that I have ryegrass, I think I could easily get bentgrass established if I wanted to," states Wojick. "The *Poa annua* just isn't a problem anymore."

Though he's also used Prograss on roughs, collars and tees, Wojick may skip his fairway applications next year since he feels his poa problem is under control.

As president of the Connecticut Golf Course Superintendents Association, Wojick is in a position to tell many others of the good results he's had on his fairways. However, he also gives them the following advice: "If you have a fairly large percentage of poa, you've got to let your membership know what you're doing before you spray the herbicide. You must realize that the product will work and the poa will die and the fairways won't look good for a while. So let people know you're doing it on purpose." **LM**

# Some of life's best lessons are learned in the school of 'soft knocks'

**The young man on the left will fall several times before he hits his first home run. The young man on the right wants him to have the advantage of falling on real turf.**

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# DIVERSIFYING YOUR BUSINESS

Landscapers today find themselves in a more competitive market than ever before. As a result, 'diversification!' has become the cry of the '80s.

*by Rudd McGary and Ed Wandtke*

MANAGEMENT IN BUSINESS

Today's landscape market is more competitive because the consumer base has become more saturated. As companies search for ways to recapture high growth rates experienced in the first few years of the company's existence, diversification has become an option viewed by many as the main path to continued growth.

Let's look at some of the reasons—perhaps not the best—why diversification sometimes takes place.

● **Psychological boost.** Diversification offers a psychological advantage for many owners. The startup of a service company usually brings a tremendously high energy period. Everyone works long hours, and, if successful, sees the results quickly. However, as the company matures, this type of excitement doesn't last. By diversifying, the excitement of a "start-up" business can be present again.

Though we often hear owners around the country cite this as their reason for diversifying, it isn't a very good one from a strictly business standpoint.

● **Excess capacity.** Many companies get to a certain point in their growth where assets such as personnel, money, equipment and facilities are under-used.

Diversification is seen as one way of better using these assets. A key question is whether or not you actually need to diversify to use your assets or whether you should remain in the same business and manage it more effectively.

Diversification, because of underused assets, is alluring to many owners, but it may not be the best way to solve the problem. If you are at maximum market penetration then you might consider diversifying. Remember to look at your current operating practices with a tough eye before you decide.

● **Available talent.** New employees often bring knowledge of a closely-related industry with them. Some companies diversify when they discover the talent needed to go into a related business is right under their roof.

Once again, this is not a very good reason to diversify into a new business.

● **Loyal customer base.** Companies that have retained customers for a long period often make the assumption that these same people will buy a new service. This is sometimes true, but doesn't take into account the ways in which consumers buy services. This is a fairly common yet incorrect reason for diversifying.

### Why diversify?

Some good reasons why you should consider diversifying include:

● **Identical buying patterns.** Consumers are likely to buy services from the same company if the services are compatible in the their mind.

If you diversify from lawn care into lawn maintenance, you have the same basic buying patterns. But, if you go from lawn care to pest control, you enter a different set of buying patterns and can no longer assume long-time customers will remain loyal.

A general rule of thumb is: outside services are generally closely related, as are inside services.

● **Saturation in the market.** If your market is now getting to a point where companies are basically trading customers each year, you should think about diversifying. Saturation usually favors the companies able to afford mass media advertising. If you can't afford such a campaign, you need to find ways to increase your revenue without having to resort to "buying" your customers. Diversifyng can be one way to accomplish this.

● **Good management.** Your company must be sufficiently well-run to allow for diversification.

Too many companies try to diversify before they have their primary service under control. Only when your primary business is under control should you diversify.

We compare this scenario to people who expect computers to cure all their accounting woes. If they have a bad manual system, the computer will simply do it faster, not make it a good system.

If you are managing your current company poorly, it's not likely that diversifying will do anything to help you.

● **Market opportunity.** There are times when diversifying makes sense from the standpoint of market opportunity: a company going out of business, a new company moving in, another 3,000 houses being built, the economy strengthening, etc. These might make your diversification a good idea.

You have to be able to analyze and act. When the market says it needs something, usually the first company to react to it makes money.

Above all else, it is important that your current business is strong. Diversifying takes a great deal of time and energy and, if your primary business isn't flourishing, diversifying isn't a wise move under any circumstances.

The market will give you the information you need to decide whether or not to diversify. If you have sufficient depth of management and capital, and the market indicates there is a consumer need, diversification might be the direction to go in order to make your company even stronger. **LM**

Wandtke and McGary are senior consultants with All-Green Management Associates in Columbus, Ohio. Dr. McGary focuses on marketing and managenent issues. Wandtke focuses on operations and financial questions.

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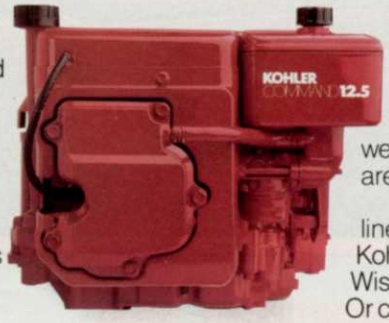


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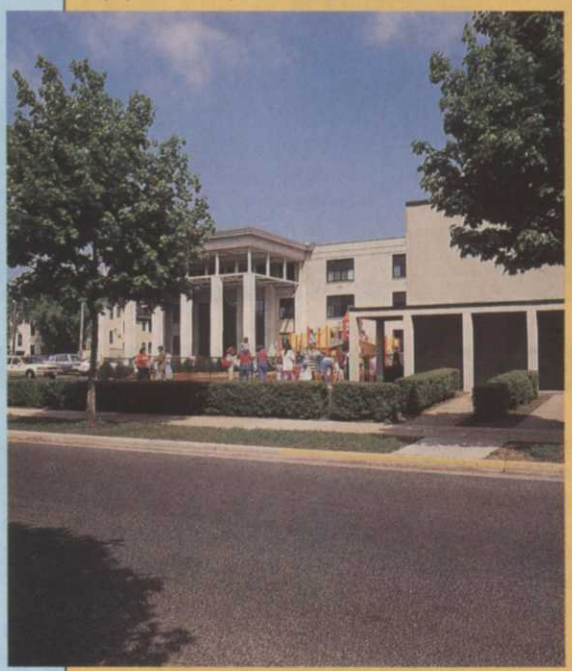
# On Design

by Will Perry, managing editor

GameTime, Inc., faced a unique challenge when Temple Israel, the oldest Jewish house of worship in Minneapolis, Minn., selected the playground manufacturer to supply and install new play equipment as part of a $6 million construction and renovation project. In addition to the playground, the project included a covered entrance, a fully-equipped 235-seat auditorium, new and enlarged office space, classrooms, meeting rooms and terraces. It involved 20,000 sq. ft. of existing facilities and was the first major renovation of the Temple since the original structure was built in 1928.



GameTime was to install play equipment that would allow as much activity as possible for the children and to do it in a limited amount of space.

GameTime's Durascape play system was selected because of its bright, colorful scheme, the flexibility of design and proven safety features. Temple Israel needed a playground to accommodate both preschoolers and elementary age children, so the company custom-designed a modular structure to offer a variety of activities that would meet the physical development and social interaction needs of both groups of children.

The colorful Durascape system is not only appealing to the children, but also blends well with the buildings and landscape surrounding the play area.

A trike trail runs on the perimeter of the playground and a 42-inch brown chain link fence surrounds the area. Shrubs are planted around the fence for screening and a quiet shaded area with Kentucky bluegrass features a GameTime bench.

**Circle No. 200 on Reader Inquiry Card**

WHERE THE C

Besides satisfying a large number of youngsters, this Timberform-2 structure by Columbia Cascade Company was chosen for Blue Lake Park, in Multnomah County, Ore., primarily because it's built completely aboveground, allowing the architect to circumvent the facility's irrigation system.

The public park has a large swimming lake, baseball fields and extensive picnic areas. The addition of the playground equipment offers entertainment choices to the younger park visitors.

The play area sits on what was once a baseball field. Its configuration was chosen from the hundreds of pre-designed variations and custom site-specific designs available from the company. Its various elements were chosen and installed in less than a week, according to a Columbia Cascade representative.

The playground is bordered by a 3-foot-6-inch fence with its metal rungs painted to match the yellow in the play structure. The area was constructed next to a paved picnic area complete with benches and barbecue pit which allows less obvious parental observation. The ground around the play area is bedded by 10 inches of bark chips. The wood used in the play equipment is free-of-heart Douglass fir which is preserved with Niedox-10.

**Circle No. 201 on Reader Inquiry Card**

Custom Structures Inc. used its "building block" approach to playground design when it introduced this system in a private recreational area in Butler, Pa.

The owner of this particular system wanted to accomplish three things: keep about 15 children of various ages busy, make them work their muscles a bit while playing, and offer them the opportunity to keep their imaginations active.

CSI accomplished this by incorporating two different sections within the playground. At left is an area designed for younger children. Its ramp is easily accessed and the slides somewhat simple. A bubble wall exists to stimulate the user's imagination, possibly transforming the system into a spaceship or castle in the child's eye.

At the right, separated by overhead bars and clatter bridge, is a more challenging setup for older children. It is distinguished by the spiral slide, wood wall, and more daring approaches.

CSI's play systems are primarily crafted from free-of-heart center California Redwood. They offer a natural resistance to decay, insects and erosion. Its natural stability means it shrinks, warps, and splits less than most other woods.

The company offers custom designs and fabrications, such as this system, that allow the consumer the opportunity to deviate from the normal to meet their own needs.

**Circle No. 202 on Reader Inquiry Card**

# HILDREN PLAY

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Circle No. 137 on Reader Inquiry Card

# RESEARCH UPDATE

## New cultivars await Great Lakes nurseries

*by Doug Chapman, Dow Gardens*

The development of new cultivars remains a main thrust of the nursery industry, as evidenced by the many new shade trees and ornamental shrub cultivars now offered in the nursery trade. These plants have been selected or developed for unique morphological characteristics (such as habit, flower color, fruit color, and/or fall color), disease resistance and environmental tolerance.

Nurserymen select and develop these plants for specific regions of the country. Results include low temperature hardiness, adaption to continental climate and sensitivity to photoperiod. The introduction of tailored-superior trees into the trade should reduce maintenance while improving quality.

One university program devoted to the development of new cultivars is at the University of Minnesota. This program is designed to introduce plants that are extremely cold temperature hardy but adaptable to continental climates. Several of Minnesota's current introductions include Northern Lights azaleas and Northwood red maple (*Acer rubrum Northwood*).

'Northwood' red maple is so well adapted to the continental climate that it is one of the first *Acer rubrum* cultivars to develop fall color. Further, it is completely winter hardy.

Michigan State University and Dow Gardens in Midland, Mich., have spent years developing new propagation techniques for clone introductions. Welsh and Sink, at Michigan State, were early researchers, developing techniques for tissue culture production of *Acer rubrum*. At Dow Gardens, we have worked on techniques for propagation of trees by cuttage. Some of the most notable that can be propagated by cuttage include: *Malus (M.) Donald Wyman, M. Mary Potter, M. Profusion, M. Red Jewel, M. Sugar Tyme, M. Snowdrift*, and *M. Selkirk*; a number of maples, such as *Acer (A.) griseum, A. ginnala, A. campestre, A. rubrum* and *A. saccharum*; and *Tilia cordata cv.*

This type of research helps circumvent the graft incompatibility problem that was noted earlier by Davidson with red maple (*Acer rubrum cv.*), ash (*Fraxinus cv.*) and Sovereign pin oak (*Quercus palustris Sovereign*).

Crab apple (Malus) has become an extremely important landscape plant from the Midwest to the Northeast. Disease posed the single largest problem related to everyday use of crab apples. Although other plantsmen are working on the problem, two nurseries doing the most with the introduction of fireblight and apple scab-resistant cultivars are Simpson Nursery in Vincennes, Ind. and Lake County Nursery Exchange in Perry, Ohio. A few unique cultivars that these two nurseries have introduced include: *M. Sugar Tyme, M. Brandywine, M. Molten Lava, M. Candied Apple*, and *M. Centurion*.

### Beware of origin

With the introduction of new cultivars, the nurseryman must be particularly sensitive to where the plant was developed or selected. Further, a testing program must be initiated to determine if these plants will grow in certain areas.

Curt Peterson, Ph.D., at Michigan State, working with the Michigan Association of Nurserymen, is setting up a series of shade tree and ornamental shrub evaluation plots that should give information to the nursery industry about the acceptability of these plants to culture in the Great Lakes region. This exciting new area of research will focus on growing plants in three distinct zones in Michigan: the Detroit area, East Lansing and Cadillac. Further, they are working with other universities in the region on data collection so that other states evaluating these new cultivars will have uniformity in reporting results.

This type of research is analogous to the shade tree evaluation plots that were developed by the Ohio Nurseryman's Association in cooperation with Ohio State University. Those shade tree plots located at the Ohio Research and Development Station in Wooster, Ohio, have resulted in significant contributions and have given some direction for the Ohio nursery industry. The research, jointly conceived by Peterson (at M.S.U.) and the Michigan Association of Nurserymen is where much of the action in the coming years will be.

No one is suggesting that clonal production is the only direction for the nursery industry, but it is one current thrust that should be researched.

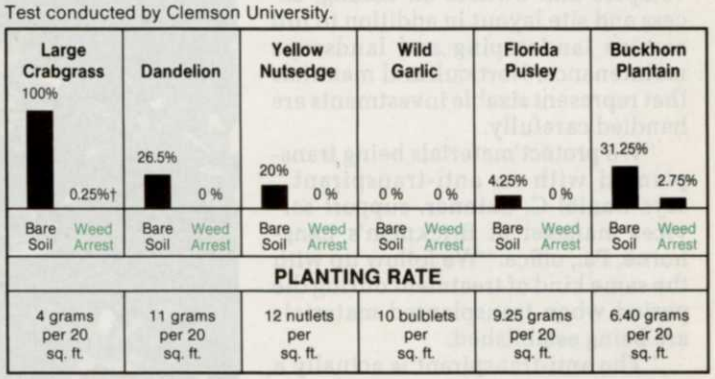
**LM**

# Introducing Warren's® WEED ARREST™ MULCH UNDERLINER

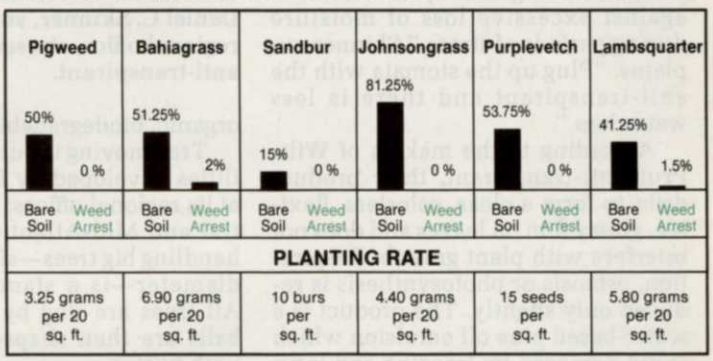
## University tests prove it does a better job controlling 12 of the toughest weeds in the business.

It's also the only *100% polyester** weed control fabric that meets the tough standards of today's turf professionals.

Test conducted by Clemson University.




Percents refer to the percentage of area covered by weeds. †0.25% means 1/4 of 1%

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Circle No. 141 on Reader Inquiry Card

# Keeping profits in the plant

The large investment today in landscape plant materials makes even minor losses intolerable. This is true for both buyers and sellers. Landscapers and owners therefore seek the same goals—quality and livability.

Brickman Industries, Inc., operates one of the largest design and build landscape firms in the nation. Quality is a standard. Brickman deals with developers and owners on zoning, access and site layout in addition to full service landscaping and landscape maintenance. Horticultural materials that represent sizable investments are handled carefully.

"We protect materials being transplanted with an anti-transpirant," says Daniel C. Skinner, support services manager at Brickman's Langhorne, Pa., office. "We follow up with the same kind of treatment during the period when transplanted materials are being established.

"The anti-transpirant is actually a waxlike coating which protects leaves against excessive loss of moisture during periods of stress," Skinner explains. "Plug up the stomata with the anti-transpirant and there is less water loss."

According to the makers of Wilt-Pruf anti-transpirant, their product dries to form a clear, colorless, flexible, glossy film on leaves and does not interfere with plant growth. Respiration, osmosis or photosynthesis is reduced only slightly. The product is a water-based pine oil emulsion which is not damaged by freezing and is an organic, biodegradable material.

**Brickman Industries' spray operation includes spraying anti-transpirant on new landscape plantings to prevent dessication.**

**Daniel C. Skinner, support services manager at Brickman's Langhorne, Pa., regional office, stresses the importance of protecting new plantings with an anti-transpirant.**

Tree moving is but one of the specilities developed by Brickman crews at its regional offices: Northeast, Central and Mid-Atlantic. Skinner says handling big trees—six to 15 inches in diameter—is a standard operation. All trees are dug by hand; the root balls are then shaped and wrapped with burlap.

"We have a 99 percent success ratio in moving big trees," Skinner says, pointing out that the biggest tree moved to date weighed 80,000 pounds. Applying an anti-transpirant greatly reduces the shock when trees are dug.

"We spray the tree with the anti-transpirant the day before digging," Skinner says. "We have been using Wilt-Pruf at a one-to-five ratio which is very cost efficient—so much so that we use the same one-to-five strength mix on materials being held and on newly-established landscape materials.

"We buy heavily from nurseries, and we often specify that trees or other materials be sprayed with an anti-transpirant the day prior to digging for delivery, just as we do in our own nursery. Our own crews also prune out one-third of the foliage on big trees in addition to spraying with the anti-transpirant ahead of digging.

"On new contracts, our people often come on site ahead of the bulldozers and move trees out to be held for later planting as part of the new landscape design. In these instances, trees being held for replanting are sprayed every 30 days with a one-to-five strength anti-transpirant mix. We do the same for trees and other materials held over the winter."

At the Langhorne headquarters, the nursery is filled to capacity each fall since Brickman crews plant year round in the territories of both eastern regional offices. Planting throughout the winter is common in the East. Any materials coming from Midwest nurseries must be brought in before freezing weather eliminates digging.

"We spray these trees every month," Skinner says. "We do the same during the winter for the majority of the plantings we have made the prior season."

Brickman, long known as a major landscape and architectural contracting firm in the northern Illinois area, opened the Langhorne office eight years ago. Because of the demand for services, this unit has greatly expanded. Business has grown tremendously in each of the past three years. Sixty-five full-time and 200 hourly employees are needed to serve customers. **LM**

# WHICH BIRD IS BEST FOR YOUR LAWN?

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*Turdus migratorius*
North America

**SPOT-BILLED TOUCANET 12"**
*Selenidera maculirostris*
Venezuela, Guyana to N. Argentina

**WHITE-TIPPED SICKLEBILL 5"**
*Eutoxeres aquila*
Costa Rica to Ecuador

**LARK SPARROW 6"**
*Chondestes grammacus*
North America

**FALCON**
*Tall-fescue, turf type*
Worldwide

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Circle No. 103 on Reader Inquiry Card

# PROBLEM MANAGEMENT

by **Balakrishna Rao,** Ph.D.

## Deactivating pre-emergents

**Problem:** *When dealing with newly-seeded lawns our technicians may once in a while accidentally spray pre-emergence herbicides such as Pre-M or Betasan. Is there something that can be done to correct this problem in the future? (Michigan)*

**Solution:** It is important not to apply pre-emergents such as Pre-M or Betasan onto an area recently seeded. However, if they are applied accidentally, a Lesco Inc. representative says activated charcoal can be used at 1 lb./1 gal./150 sq. ft. to deactivate the herbicide. The residue can then be washed off the leaves and the area reseeded after at least 24 hours.

Be sure to test this treatment before trying it in your clients' lawns. If it doesn't work well, then follow the product label recommendations for waiting period for reseeding.

## On planting trees

**Problem:** *We are interested in landscaping several residential properties in a new development with no trees. When is the best time for planting, and can you give some guidelines on transplanting plants? (Ohio)*

**Solution:** Landscaping a property is an art as well as a service. A number of books on this subject can be found in local libraries that will help you determine proper plant material for a specific location.

Plant selection is a very important factor in good landscaping. Your local cooperative extension service should be able to furnish helpful information on recommended plants and their tolerance to environmental and soil conditions and major pest problems in your area.

Several factors, such as age; size; species; adaptability to the site (soil type and location in relation to other features of the property); timing; method; pre- and post-transplanting treatment; and use of anti-transpirants can affect transplanting results.

Reports suggest that spring transplanting is best for most plants, while some will adapt to fall transplanting. Spring transplanting is most successful after the danger from frost and prior to bud swell or new growth. Cool temperatures and spring rains help prevent excessive drying, especially of the root system. Younger trees, 1 to 1½ inches trunk diameter, transplant more successfully than larger plants.

As a general rule of thumb, larger plants will take a longer time for recovery and establishing than younger plants. It may take three to four years for recovery after transplanting for trees under 2 to 3 inches in diameter. Larger diameter trees may take five to 10 years for proper establishment.

Different species may respond differently for transplanting. During this recovery period, proper watering, fertilizing and pest management should be provided as needed. Improper planting method, poor postplanting care, improper site and transplant shock may claim a few plants.

Before planting, perform a percolation test to determine proper drainage. This involves digging a hole and filling the hole with water and letting it drain once. Refill the hole with water, allowing 24 hours to drain. If it drains too fast or too slow, provide needed corrections for better drainage. An average percolation rate of 1 inch per hour is desirable for most species.

The planting hole should be twice the width of the root ball, the soil should have good drainage, and the plants should be planted at the same depth as they were in the nursery. If planted too deep, the root system may suffocate; if too high, plants will be subjected to excessive drying. Reports indicate that soil taken out of the planting hole should be reused while transplanting.

For more detailed information, I suggest you refer to books in your library, specifically, "Tree and Shrub Transplanting Manual", by E. B. Hemelick, Illinois, National History Survey, Urbana, Illinois.

## A reader responds

A representative from The Doggett Corporation made the following comments about a December article concerning oak iron deficiency:

"The treatment you recommended to green-up iron chlorosis oaks is purely a symptomatic approach. Generally, the problem of iron chlorosis arises from an alkaline soil condition which ties up otherwise available iron.

"Application of soluble iron chelate will get into the tree's system; but the problem will continually reoccur unless the pH of the soil is corrected. Applications of elemental sulphur into the root area will correct the pH and make iron and other tied-up elements available.

"The sulphur we refer to is a wettable powder which can be injected into the soil. In conjunction with this application of sulphur, it would be advisable to apply an EDDHA Iron Chelate which works best in soils with a pH of 7.5 and above. This sulphur application lasts for a good many years; and after the tree has turned around, only maintenance levels of a good quality tree fertilizer would be necessary."

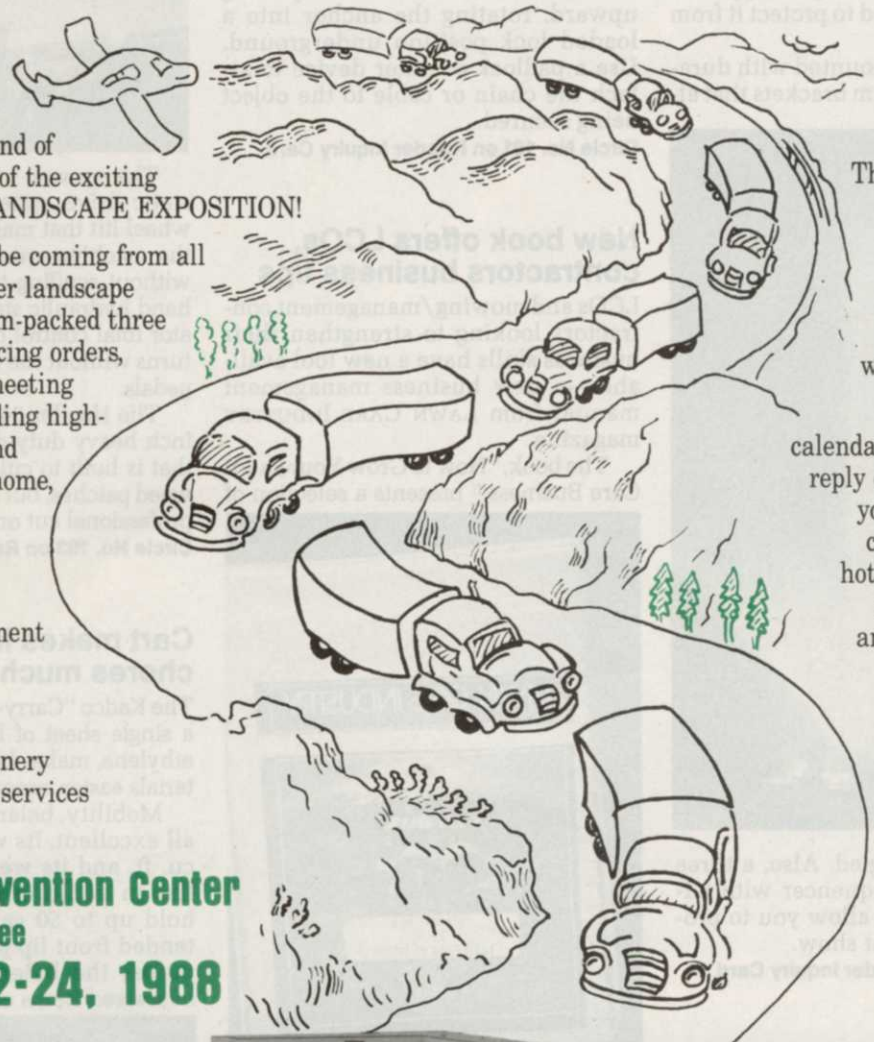
I agree with the above comments concerning alkaline soil and its role in nutrient availability. The problem is lowering the pH of alkaline soil.

I am not familiar with any information in literature to show that Doggett Corporation's findings can reduce the pH of alkaline soil. Our experience and other research findings suggest that it is difficult to lower pH through the use of sulphur. Even after using it for several years, only a slight lowering of the pH is expected.

**Balakrishna Rao is Manager of Technical Resources for the Davey Tree Co., Kent, Ohio.**

Questions should be mailed to Problem Management, LANDSCAPE MANAGEMENT, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2-3 months for an answer to appear in the magazine.

# TRUCK ON DOWN



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Circle No. 120 on Reader Inquiry Card

# PRODUCTS

## Underwater lights allow waterscape illumination

Barebo Inc. Manufacturing has introduced its Fountain-Glo Lighting System, water-tight lights that can be totally immersed. They can be used as accent lighting or mounted in the company's rock float cover.

The systems feature die-cast, corrosion resistant copper-free aluminum houses for a 36- or 14-watt high intensity halogen bulb with flood beam. The lens, made of tempered glass, has a custom designed type 304 stainless steel shield to protect it from incidental contact.

The lights are mounted with durable swivel aluminum brackets that allow them to be angled. Also, a three channel, 10 step sequencer with adjustable timer base allow you to program your own light show.

**Circle No. 190 on Reader Inquiry Card**

## Anchor deters theft of landscape materials

A new type of low-cost, theft-deterring anchor introduced by Foresight Products, Inc., makes it difficult to steal portable contractor's equipment as well as tables, benches and grills.

Available in two models, with holding capacities of 1,100 and 3,000 pounds, and with either cable or chain attached, Duckbill anchors are easily and quickly installed by one person with a heavy hammer and drive rod. The anchor is installed by

driving it into the earth to the proper depth, then wrapping the chain or cable around the drive rod and pulling upward, rotating the anchor into a loaded lock position underground. Use a padlock or other device to attach the chain or cable to the object being secured.

**Circle No. 191 on Reader Inquiry Card**

## New book offers LCOs, contractors business tips

LCOs and mowing/management contractors looking to strengthen their business skills have a new tool available—a new business management manual from LAWN CARE INDUSTRY magazine.

The book, "How to Grow Your Lawn Care Business," presents a selection of

business management articles that appeared in the magazine in 1987.

The book addresses better hiring methods, how to upgrade marketing efforts, how to put together an advertising plan, how to expand into new services, how to measure customer satisfaction, knowing when to lease equipment and other management topics.

The book costs $35.00.

**Circle no. 192 on Reader Inquiry Card.**

## Six-wheel mower adjusts to keep its operator level

The Hustler 640 Hillsider from Excel Industries features a 28.5 hp, liquid-cooled diesel engine and heavy-duty hydraulics. The six-wheel drive unit automatically tilts left or right when on a slope, reducing operator fatigue and keeping the engine level for proper lubrication.

The mower utilizes a dual-hydrostatic drive system and power assist wheel lift that makes it possible to turn the machine around in its own radius without scuffing the turf. Simple, one-hand hydraulic steering gives the operator total control of speed, braking and turns without the use of clutch or brake pedals.

The Hustler 640 Hillsider uses a 72-inch heavy duty dual trim rotary deck that is built to cut tough roadsides and weed patches, but still deliver a smooth, professional cut on recreational turf.

**Circle No. 193 on Reader Inquiry Card**

## Cart makes landscape chores much easier

The Kadco "Carry-It" cart, molded from a single sheet of high molecular polyethylene, makes hauling landscape materials easier, according to its maker.

Mobility, balance and leverage are all excellent. Its volume capacity is 7 cu. ft. and its weight capacity is 300 lbs. In addition, the "Carry-It" can hold up to 50 gal. of liquid. An extended front lip prevents slip-off and makes the balance of awkward or oversized items easy to move.

**Circle No. 194 on Reader Inquiry Card**

For grounds maintenance, nurseries, Christmas tree farms, highway or municipal vegetation—for just about any grass control problem—Poast® herbicide is the simple solution.

Poast delivers consistent control of the toughest grasses. Like bermudagrass and crabgrass, quackgrass and foxtails. Yet, Poast is proven gentle to established plantings of valuable greenery. Like flowers, shrubs, trees and ground covers.

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And perhaps best of all, Poast can be highly cost efficient. It can eliminate labor-intensive and time-consuming hand roguing or hoeing. And labor and time equal money.

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**BASF Corporation**
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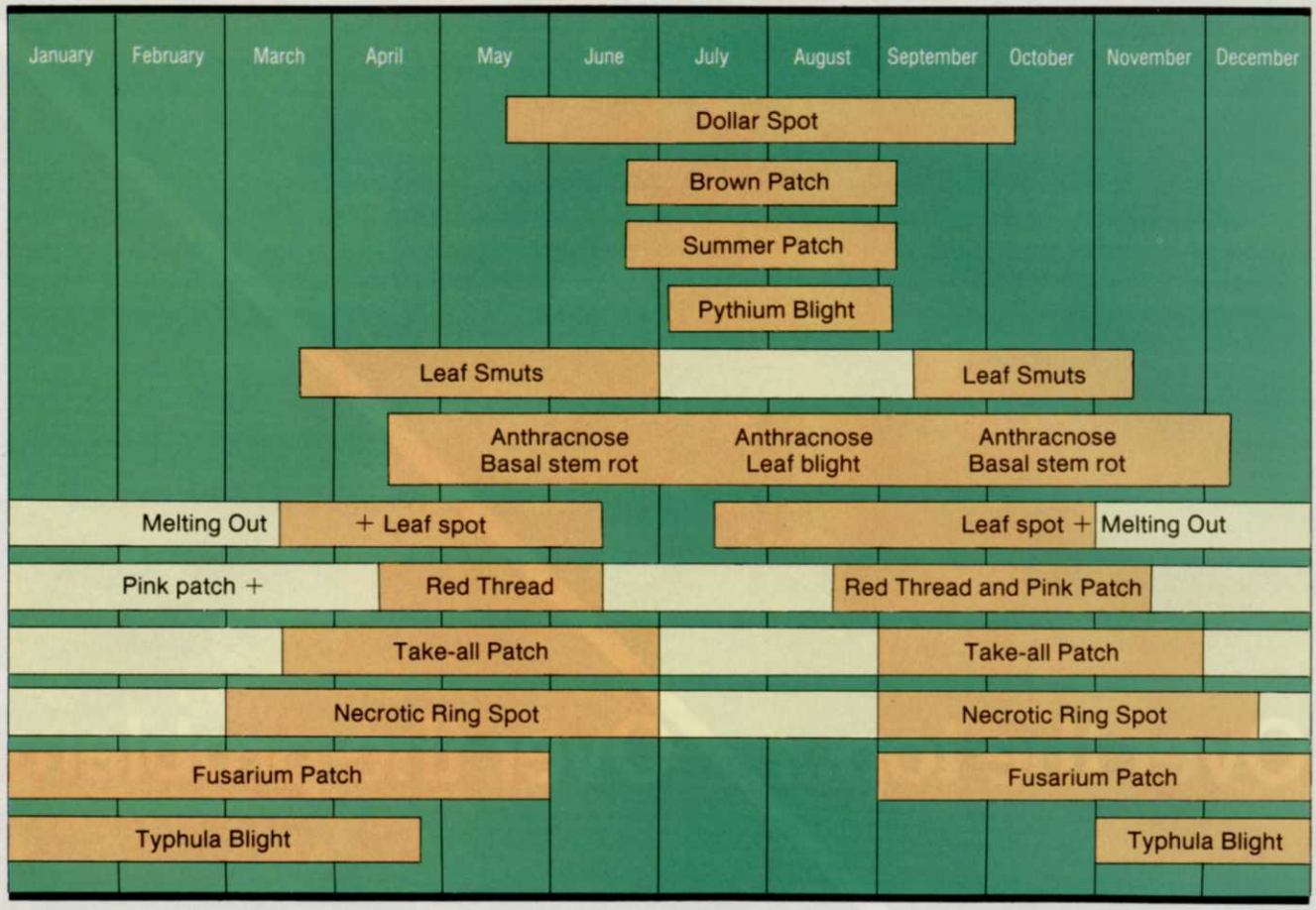
Circle No. 102 on Reader Inquiry Card

## Common Diseases of Cool-Season Turf




Persistent symptoms often still visible.

Pathogen most active.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Circle No. 125 on Reader Inquiry Card

# LANDSCAPE MANAGER OF THE YEAR

co-sponsored by

1987 Landscape Manager of the year
**Michael Hugg**

Entry forms are now being accepted by the Professional Grounds Management Society and Landscape Management magazine for their second annual "Landscape Manager of the Year" award.

Purpose of the award is to recognize superior job performance among landscape managers, to challenge those involved in the industry to achieve higher standards of excellence, and to bring national recognition to deserving managers.

Any person directly responsible for the professional maintenance of one or more landscapes is eligible to enter. Applicants will be judged according to job performance, honors and awards, procedures and philosophies, and contributions to the green industry. Applicants will be asked, at the time of entry, to submit four 5 x 7 black-and-white glossy photos and 10 color 35mm slides of current work areas with a short narrative on each.

(clip and mail)

**Applicant's name** **Title**

**Applicant's company**

**Official entry form should be sent to:**

**Name** **Title**

**Company**

**Address** **City/State** **Zip Code**

**Mail to:** PGMS, Landscape Manager of the Year, 1201 Galloway Ave., Suite 1E, Cockeysville, MD 21030

# CLASSIFIEDS

**RATES:** $1.10 per word (minimum charge, $25). Bold face words or words in all capital letters charged at $1.35 per word. Boxed or display ads: $90 per column inch-1x (one inch minimum); $85-3x; $80-6x; $75-9x; $70-12x. Agency commissions will be given only when camera-ready art is provided by agency. For ads using blind box number, add $10 to total cost of ad. Send ad copy with payment to Dawn Nilsen, LANDSCAPE MANAGEMENT, 1 East First Street, Duluth, MN 55802 or call 218-723-9200.

**BOX NUMBER REPLIES:** Mail box number replies to: LANDSCAPE MANAGEMENT, Classified Ad Department, 1 East First St., Duluth, MN 55802. Please include box number in address.

## BUSINESS OPPORTUNITIES

**CURB KING** - Concrete landscape borders, low investment and high returns. 1-800-423-1452. 8/88

**LANDSCAPE PUBLISHING CO. FOR SALE.** Monthly magazine for landscape contractors and landscape maintenance. Ten book titles, one audio cassette, one video. Can be operated anywhere. Will train, terms available. Call (619) 766-4749. 7/88

**LANDSCAPE MAINTENANCE AND CONSTRUCTION COMPANY.** Sunbelt, four cities. Average sales $4+ Million. Excellent condition. Management stay or go. Stock or Asset Sale. By Principal. Write to LM Box 454. 7/88

**LANDSCAPE INSTALLATION/MAINTENANCE COMPANY** for sale. Located in booming area north of San Francisco. Year-round moderate climate, twelve years in same location with established clientele. Will train. Call Jeannie Lewis 707-762-2787. 7/88

**WANT TO BUY OR SELL** a golf course? Exclusively golf course transactions and appraisals. Ask for our catalog. McKay Golf and Country Club Properties, 15485 N. East Street, Lansing, Michigan 48906. Phone (517) 484-7726. TF

## HELP WANTED

Landscape estimator for commercial projects. Applicants must be familiar with scale drawings, able to complete take-offs, have good math abilities and have some design background. This position is 50% office work and 50% field work in locating and purchasing of landscape materials, and some sales calls. We are looking for an individual who will grow with this position and become a Sales person/Contract administrator. Thornapple is located in the western suburbs of Chicago, established since 1947, has an excellent reputation for high quality work. We are a growing firm proud of the high caliber employees which have made our growth possible. If you are qualified for this career opportunity please send resume, work and salary history to Peter Grathoff. Complete confidentiality assured. Thornapple Nurseries, Inc., P.O. Box 181, Geneva, IL 60134. 312-232-2076. 7/88

**JOIN THE AMERICAN TEAM** - And go for the gold...Aggressive landscape company looking for aggressive career minded winners of landscape/irrigation sales; estimating; purchasing; supervision nursery production and sales. Salary and benefits commensurate with experience. Equal opportunity employer. Send resume to Mickey Strauss, American Landscape Companies, 7949 Deering Ave., Canoga Park, CA 91304 (818)999-2041. 7/88

## MANAGEMENT

Ever-Green Lawns, a division of ADT, Inc., is seeking sales and operations management personnel for the Philadelphia market which is projected to double in sales over the next two years. To qualify, candidate must possess a proven successful track record in the Eastern Coast area in sales or operation management. These positions are hands on with the opportunity to set a career path over the next two years. We offer an excellent compensation package and benefits including: health, dental, life, LTD, 401 (k), vacation, holidays and sick days. If you are "Results Oriented" with a desire to achieve above average goals and wanting to grow with a leader in the industry, submit resume including salary history to:

Ever-Green Lawns Corp.
1080 Industrial Highway
Southampton, PA 18966

**IRRIGATION SUPERVISOR.** ("INC 500 company") Experienced, aggressive, sales supervisor to manage lawn sprinkler system department including sales, installation and service. Challenging growth opportunity with good salary, benefits, and company vehicle. Send resume: Attn: Monty Mitchell, Suburban Landscape Associates, P.O. Box 2342, Davenport, IA 52809. 7/88

Tree care person — experienced in Horticulture or Aboriculture. Will train tree climbing and/or spray applicator. Salary & benefits commensurate with ability and experience. Send resume to: Tree Care, Inc., 216 East Main St., Huntington, NY 11743. 7/88

**SALES MANAGER** - A very aggressive person currently active as sales manager is needed to develop sales for an established and progressive (design/build landscape firm located in the Chicago western suburbs) firm. This person will work closely with a principal of the firm and eventually take over the top management position of vice president in charge of sales. Good salary. Compensation package tied to performance. Equity/ownership possible for the right person. We are interested in only experienced highly motivated professional individuals. Send resume to LM Box 447. TF

**WANTED - Aggressive Manufacturer's Reps** - Manufacturer of agricultural, golf course, municipal and lawn & garden spraying equipment is seeking qualified reps with experience in sprayer sales. Seeking nationwide network, exclusive territory contract, excellent technical support and top of the line equipment. Send resume and current line card to: The Broyhill Company, P.O. Box 475-CB, Dakota City, NE 68731-0475. Phone: 1-800-228-1003. 7/88

Willoughby Golf Club in Stuart, Florida will be soon interviewing for a Head Mechanic and an Irrigation Technician to manage the golf and grounds departments. Salary ranges between $18,000-$22,000. Positions available October 15, 1988. Please send resume to: Willoughby Golf Club, 1600 Indian Street, Stuart, Florida 34997, Attn: Kevin Downing. 8/88

**Lawn Care $20M-$50M**
Career opportunities coast-to-coast. Employer retained. Experts in personnel since 1968.
**USA Careers** 515-394-2556
New Hampton, IA 50659

**LANDSCAPE SUPERVISOR.** ("INC 500 company") Talented, experienced, supervisor to manage landscape department including scheduling and training personnel development. Challenging growth opportunity with good salary, benefits and company vehicle. Send resume: Attn: Monty Mitchell, Suburban Landscape Associates, P.O. Box 2342, Davenport, IA 52809. 7/88

**PERSONNEL:** Hydro Lawn, a Mid-Atlantic full service lawn care company is accepting applications for Sales/Customer Service management positions. Applicants must be aggressive, responsible, neat and experienced in sales/customer service. Compensation from $25-35,000 plus full benefit package. Send resume to: Hydro Lawn, Inc., 7905 Airpark Road, Gaithersburg, Maryland 20879. TF

**LANDSCAPE PROFESSIONALS** - Excellent employment opportunity available for a career-minded individual to join our **SPECIAL SERVICE DIVISION.** We are looking for a self-motivated individual that enjoys a challenging career. Responsibilities include overall pest and disease control in all commercial locations, as well as upkeep of major atrium plantings through a regular program of pruning and wash-downs. Salary commensurate with experience, efficiency and expertise. Call or send resume to: CREATIVE PLANTINGS, INC., P.O. Box 119, Burtonsville, Maryland 20866, Attn. Raymond Greenstreet. 7/88

**AN INVITATION FOR OPPORTUNITY**

My name is Larry Greenwald. I am the President and General Manager of Plantasia. Some of you in the interiorscape industry and allied professions may recognize our name.

We feel Plantasia has been one of the innovators in our industry over the years. From our assistance in the formation of the Interior Plantscape Association to participation in the National Tropical Foliage Short Courses, Ohio Floral Short Courses, ALCA-IPD and various lecture tours throughout the United States, we hope, in our small way, that we have helped strengthen the profession as a whole.

Last summer culminated in one of the most exciting events in our 15 year history when we were acquired by The Davey Tree Expert Company. Davey Tree is a 78 year old, employee owned, 150 million dollar horticultural company. They currently have offices in 65 markets in 40 states.

The Davey/Plantasia goal is straightforward and exciting: through rapid, yet controlled growth we will achieve significant national market penetration within five years. This growth will provide unparalleled opportunities for our associates to contribute to our success and profitability. We cannot hope to achieve our goal alone. We are looking for the most valuable commodity any organization can have - people. Plantasia needs horticulturalists, supervisors, managers, and operation and sales experts to join our team, learn our system and eventually earn the opportunity to direct divisions of a branch office in one of our selected expansion markets.

If you can offer us energy, self-motivation, innovation and dedication we will provide commensurate rewards:

1. An atmosphere of appreciation for your efforts.
2. Comprehensive training and support.
3. Encouragement for achievement.
4. Unexcelled opportunity for advancement in salary and job responsibility.
5. Stock purchase plan.
6. Excellent fringe benefits.

While we are primarily seeking "fast track" professionals from the interiorscape industry, this advertisement is also appearing in other horticultural publications. If your background encompasses exterior landscaping, turfgrass, landscape architecture or a similar field, we still want to talk to you.

I hope you have found this advertisement different yet refreshing. We are truly excited about our future. If you are willing to make a commitment, we invite you to join our team. **Please send employment and salary history to David Davies, Vice President, Plantasia, Inc., 5221 Ebright Road, Canal Winchester, Ohio 43110.**

# Excellent Overall Performance

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## TURF-TYPE TALL FESCUE

*PVP 8200167

Jaguar takes care of itself. It needs less feeding and thrives in hot weather and drought with limited watering. Jaguar takes traffic because it forms a dense, deeply-rooted persistent turf. Jaguar resists diseases (Rhizoctonia brown patch, in particular) and tolerates shady, low light areas. Jaguar needs less mowing. It is lower growing and more tolerant of close cutting. Jaguar has a leafier, finer texture and beautiful dark green color.

*To find out more about Jaguar Turf-Type Tall Fescue contact the distributor nearest you or circle the number below on the card in back.*

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Fairfield, NJ 07006
201-882-7755

Byrum Seed Co.
Charlotte, NC 28224
704-527-0481

Manglesdorf Seed Co.
St. Louis, MO 63166
314-535-6700

Geo. W. Hill Seed Co.
Florence, KY 41042
606-371-8423

Wetsel Seed Co.
Harrisburg, VA 22801
703-434-6753

Germains, Inc.
Fresno, CA 93777
209-233-8823
Los Angeles, CA 90051
213-589-6331

Circle No. 108 on Reader Inquiry Card

## HELP WANTED

### Director, Medalist Turf

Northrup King Co. is seeking an experienced turf professional capable of managing a dynamic and rapidly-growing proprietary turfgrass division. The individual selected will be familiar with the turfgrass industry, have a proven track record and be able to provide leadership in all important functional areas including sales, marketing, production, research and planning. This position will be located at our corporate headquarters in Minneapolis, Minnesota.

For consideration, send your resume, in confidence, to:

M.S. Mikulay
Northrup King Co.
P.O. Box 959
Minneapolis, MN 55440

Established Central Florida landscape contractor has an opening for a highly qualified operations manager for its maintenance division. Ability to schedule, organize and manage people in a rapidly growing organization. Heavy field experience and a commitment to quality work required. Opportunity for an aggressive person to be a key member of a top-notch team. Excellent salary and benefits. Call Mr. Singh (305) 831-8101. 9/88

Experienced Irrigation Superintendent - Golf Course Design and Construction Company seeking individual with experience at irrigation system design/installation crew management and equipment operation to work on various projects throughout Florida. Top salary and benefit package. Reply in confidence to Jim Vojnovski, McCumber Golf, P.O. Box 490, Middleburg, FL 32068. 7/88

### ServiceMASTER.

If you are in the lawn care business, ...in a related field, or...just looking to get started...

WE CAN HELP YOU GROW!

Our network of over 3600 independently owned franchised businesses worldwide testifies to our ability to help the small business owner to flourish. If you are enthusiastic, growth-oriented, and interested in learning what ServiceMaster has to offer, then we are interested in getting to know you!

For more information call:

Roger Nondorf
ServiceMaster LawnCare
1-800-255-9780

Florida Landscape Contractor in business 15 years, has an opening for an experienced landscape architect or highly qualified sales person to handle design build sales and business development. Applicant must be a self-starter and possess strong sales skills. Unlimited potential in a growing firm with a top notch track record. Contact Mr. Singh (305) 831-8101. 9/88

**IRRIGATION SALES** - We are expanding our Irrigation Division, and are seeking a salesperson experienced in design and/or sales of golf course and commercial irrigation systems. Excellent benefits and growth potential. Please send resume to: S.V. Moffett Co., Thruway Park Dr., West Henrietta, NY 14586 Attention: Ken White. 8/88

**SALES:** Landscape Sales person with 1-2 years experience. Individual must be aggressive, motivated and able to work with crew foreman as well as prospective clients. Design ability a must. Contact: Vander Veen Landscape Co., P.O. Box 164, Mason, MI 48854 (517) 676-1093. TF

### *We are recruiting!*

We're looking for knowledgeable people in the following areas:

**Environmental Care, Inc.**
*landscape management*

**Arbor Care**
*commercial & industrial arboriculture*

**Interiorscape Division**
*interior landscape maintenance*

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| Sacramento | Santa Ana | Phoenix |
| San Diego | San Jose | Denver |
| Houston | Ventura | ColoradoSprings |
| Palm Springs | | |

**Send resume to:**

**Robert L. Scofield**
**Personnel Department**
**24121 Ventura Boulevard**
**Calabasas, CA 91302**

*an equal opportunity employer by choice*

**EXPERIENCED LANDSCAPE FOREMAN:** Design & Construction Company seeking person with 3-5 years experience. Individual must be able to take total responsibility of projects, from start to finish. Plant knowledge, construction techniques, blue print reading a must. Contact: Vander Veen Landscape Co., P.O. Box 164, Mason, MI 48854 (517) 676-1093. TF

Landscape Architects/Supervisors (project foremen) to join a nationally acclaimed firm looking to expand into its second generation Long Island area supports a high budget landscape industry. Year round employment, company benefits and continuing education available. Experienced and aggressive people send resume to: **GOLDBERG & RODLER, INC.**, 216 East Main Street, Huntington, New York, 11743. 7/88

**IRRIGATION.** General managers, foremen, installers. We seek ambitious people who want to move up the ladder. Our training schedule allows you to advance quickly. We have opportunities in five midwest locations. Send us your resume and objectives. The Lawn Pros Sprinkler Co., 3508B Roger B. Chaffee Blvd., Grand Rapids, MI 49508. 12/88

**PARKS COORDINATOR,** Ketchikan, Alaska - Administers Parks Maintenance and Beautification Divisions; Bachelors in Parks Administration, landscape design or horticulture preferred. Current experience in administering parks services. $32,388 salary with benefits. Send resume to Ketchikan Job Service, 326 Dock Street, Ketchikan, Alaska 99901. The city of Ketchikan is an EEOE. 7/88

**SALES MANAGER:** Mid Atlantic turf-ornamental supply business with history of continued growth. Seeks a motivated person with 5-8 years sales to the turf and ornamental or agricultural markets. Person should have sales training, market planning experience. Competitive salary, benefits, opportunity for professional growth. Send resume to: LM Box 453. 8/88

**LANDSCAPE MAINTENANCE SUPERVISORS AND FOREMEN** - Heyser Landscaping, Inc., a prominent landscape contractor in the Philadelphia, Wilmington, Allentown area is seeking experienced personnel in all phases of landscape maintenance, pest management and installation. Contact Heyser Landscaping, Inc., 400 North Park Avenue, Norristown, Pennsylvania 19403, 215-539-6090. 7/88

### MANAGEMENT

Due to our aggressive expansion program in the midwest, east coast and southwestern regions, we are needing management personnel for all phases of our tree & shrub and lawn care services, in both residential and commercial operations. If you are "Results-Oriented" with a strong desire to achieve and high personal goals, send resume including salary history to:

Corporate Recruiter
Ever-Green Lawns Corp.
1390 Charlestown Ind. Dr.
St. Charles, MO 63303

Arborist - Tree climber and spray applicators, experienced or will train forestry or horticultural student. Tremendous growth potential. Tree Care, Inc., 216 East Main Street, Huntington, New York, Area Code: 516-#424-9440 or #424-9441. 9/88

### ASSISTANT MANAGER GROUNDS MANAGEMENT DIVISION

New Jersey's most progressive, well equipped Landscape Management Company is seeking a person capable of managing a division of our company.

Individual must have at least two years Horticultural degree and three years managerial experience in the Landscape Industry.

EXCELLENT SALARY AND BENEFITS
COMMISSION AND VEHICLE

Contact William H. Peterson at 201-992-0598
between 8 and 5
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GROUNDS MANAGEMENT DIVISION

*"The Ultimate In Landscaping"*

**AGRONOMIST:** Middle management position with Lawn Doctor, Inc. the nation's leader in franchised lawn care. Position involves working with franchises on turf program development and agronomic training. BS in Agronomy or related area and good communication skills necessary. Reume & salary history to: 73 Atlantic Avenue, Matawan, NJ 07747. 7/88

**LANDSCAPING AND GROUNDS MAINTENANCE SUPERINTENDENT** Supervise/participate in municipal landscaping and grounds/parks maintenance. Supervise custodial services. Requires considerable knowledge of turf and all aspects of the cultivation and pest/disease control of plantings indigenous to South Florida. Requires Bachelor's Degree from an accredited college or university in landscaping, horticulture or related field and some supervisory experience. Three to five years experience in either groundskeeping or landscaping supervision may be substituted for degree. Salary: $28,196. - $35,213. Apply: Personnel Department, City of Hallandale, 308 S. Dixie Hwy., Hallandale, FL 33009 (305)458-3251. Applications will be accepted until position is filled. Equal Opportunity Employer. M/F/H/V. 7/88

## FOR SALE

Brouwer Sod Harvester, 18″ mounted on 3600 Ford Diesel, $15,000.00 Meyers Turf Farms, 913-681-2668. 7/88

**WHOLESALE PARTS & SUPPLIES:** Over 3,000 replacement parts and tools in stock at direct wholesale prices. Spark-plugs, edger blades, monofilament cutting line, throttle cables, wheels, tires, tubes, lawn mower blades, shovels, rakes, pruners & more! Call today for a **FREE** catalog & price list. **TOLL FREE** 1-800-356-0171 or 404-438-6072. **GREENLINE DISTRIBUTORS,** P.O. Box 2253, Smyrna, GA 30081. 7/88

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Now you can secure loads in your pickup, trailer or van in a matter of seconds. Simply position the strong, durable galvanized steel HOLDIT™ bar where you want it and twist. That's it! No tools, no ropes, no bungies, no hassles.

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For Sale: Semi-trailers with 4000# capacity unloading booms, $5000 & $6000. Tandem truck with 21 ft. bed; $12,500. Good condition. Beck's Turf, Auburn, AL. ph. (205) 821-0969. 7/88

Mid states Turf Growers-Full line Sod Company. Bermuda 9¢ sq. ft., Blue Grass 10¢ sq. ft., K 31 Fescue 10¢ sq. ft., St. Augistine 15¢ sq. ft., Centepede 15¢ sq. ft., Zoysia 25¢ sq. ft. Trucking $1.75 loaded mile. 913-681-2669. 7/88

**ATTN: GOLF COURSE SUPERINTENDENTS—** Bentgrass Sod at putting green height, guaranteed weed and poa annua free. Stormy Acres, West Haven, VT 05743. 802-265-3046. TF

**LAWN SEED.** Wholesale. Full line of top quality grasses. Improved bluegrass varieties, fine fescues and fine bladed ryegrasses. We specialize in custom mixing. Oliger Seed Company, 89 Hanna Parkway, Akron, OH 44319. Call collect (216) 724-1266. TF

**FOR SALE:** Established Garden Center and Landscaping business in Upper Michigan. (Both or just Garden Center). Owners retiring. For more information write: P.O. Box #7872, Ann Arbor, MI 48107. 7/88

**THE AFFORDABLE STUMP CUTTER:** Stainless Steel, HEAT TREATED, 5½ lbs., FAST, SAFE cutting. Unique locking system holds 6 grooved carbide teeth removed with one recessed bolt. Compatible with new or old two wheel Gravely Tractors. Kinetic Stump Cutter Inc., 1220 W. Hawie Street, Jupiter, FL 33458 or (407) 744-0680 after 5 p.m. EST. 12/88

**ATTENTION GOLF COURSE SUPERINTENDENTS: Great Meyer Zoysia for your Fairways and Tees. Guaranteed Bermuda free. Beauty Lawn Zoysia (Cincinnati) 1-513-424-2052. 3/89**

Model 67 Seeder

# the BROUWER LAWNMAKER 67

**The landscapers new tool . . .** designed to give a new dimension to seeding and the landscaper a new tool that will seed, fertilize, crush soil and rake, all in one pass.

The Model 67 lawnmaker eliminates hours of manual labour. The rugged design and construction guarantees season after season of outstanding trouble free performance. It is equipped with adjustable teeth to break up hard soil and remove tracks, and a levelling bar to create a smooth seed bed. Check the list of other outstanding features to see why the Lawnmaker 67 consistently does the job . . . when others can't.

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**FEATURES:**

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88-97

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## FOR SALE

Benson A-34 Kentucky Blue Grass seed or Midnight seed for sale. Call 303-841-8331. 7/88

**BROUWER SOD HARVESTER. 616-669-6713.** 7/88

1983 FMC D0601000 factory unit. 1000 gallon stainless steel tank. 60 GPM John Bean pump, 65 HP 4 cylinder Wisconsin engine. Used only 6 months. Replacement cost new $22,000, steal it for $7,995! Ask for Paul 9 a.m. - 9 p.m. 516-471-3200 7/88

**BRAND NEW TOPSOIL SCREENERS. EXCELLENT FOR CONTRACTORS, LANDSCAPERS OR GOLF COURSES. NO MOVING PARTS, SIMPLE TO USE. SIZES AVAILABLE 8′ × 8′, $3,995. AND 12′ × 8′, $4,995. NORTH AMERICAN CONTRACTORS 216-799-9725.** 10/88

**STUMP CUTTER** - Compatible with two wheel Gravely tractors. Stainless steel, heat treated, 6 carbide cutters 9/16" rounded tips, one bolt change. Kinetic Stump Cutter Inc., P.O. Box 115, Jupiter, FL 33468-0115 or call 1-800-422-9344. 12/88

**FOR SALE—IRRIGATION SYSTEM:** Ag-rain Traveling Water Winch, 600′ of 4" Hose, 600′ of 6" Aluminum Pipe. Price—$3,500.00 Call (815) 633-0211. 7/88

**BROUWER**-7 Gang PTO mower and new parts. Low use, good condition. $5,500. **FOLEY**—388 reel sharpener, like new, $1,500. (405) 771-5122. P.O. Box 424, Spencer, OK 73084. 7/88

**TWO BIG JOHN TREE SPADES** - 1978 Model 78 on Chevy C-65, also 1985 model 80A on Ford F-8000. (407) 562-9031. 7/88

**PIPE LOCATOR** - Inexpensive! Locates, traces PVC, metal, cement pipes, sewers, septic tanks, electric, phone, gas lines. Block & Company, Box 18058, Cleveland, OH 44118. 216-371-0979. TF

Finn Hydroseeders, Mulch Spreaders, Krimpers, Pit Burners, Fiber Mulch & Tackifiers. New & Used. Wolbert & Master, Inc., P.O. Box 292, White Marsh, MD 21162, 301-335-9300. TF

Ungalvanized Wire Baskets and Burlap Liners for tree spades and hand dug made by Colorado Wire Products, 9432 Motsenbocker Road, Parker, CO 80134. 303/841-3354. TF

**CUSTOM LANDSCAPING TRAILERS.** Protect your investment from exposure and theft. Choice of colors, delivery available. **NORTHWEST TRAILERS,** Palatine, IL 800-522-6208 or 312-577-6208. 7/88

**ZOYSIA MEYERS Z-52 SOD OR SPRIGS. EXCELLENT QUALITY DELIVERED ANYWHERE AT REASONABLE PRICES. ALSO ROW PLANTING AVAILABLE. DOUBLE SPRINGS GRASS FARM, SEARCY, AR. 1-800-458-4756.** TF

**HYDRO-MULCHERS AND STRAW BLOWERS** New and used. **JAMES LINCOLN CORPORATION,** 3220 S. Jupiter Rd., Garland, TX 75041. (214) 840-2440 (TX), (800) 527-2304 (except TX). TF

Finn hydro-seeder, 1,500 gallon mounted on '72 Chev C50. Good mechanical condition. Ready to work. $5,000. For information call 313-847-0954. 7/88

**FOR SALE:** Toro Parkmaster, micro adj., 7 gang, 5 blade, rebuilt cutting units, rebuilt engine, absolutely top cond., 100% ready for spring. $8,900. Also, 1968 International rough terrain forklift, sideshift. $5,900. Also, 7 Jacobsen fairway mowers, no frames (rough) $700. (313)653-5695. 7/88

**REINCO** Power Mulchers and Hydro Grassers. Poniatowski Bros. Equipment Company, 30 Route 31, Flemington, NJ 08822. 201-782-3514. 8/88

Long mfg. big gun travel irrigation system with new 3 ¾" I.D. hose, with 2,000 ft. of 6" aluminum pipe. Will irrigate up to 20 acres per day. Also, (2) 1,500 GPM, 100 PSI pumps, with V8 motor on self-contained full trailers. Seven Cities Sod, Inc., 319-391-1663. 8/88

**For Sale** - beautiful 9 hole golf course, excellent condition. 13 years old, approximately 2,000 pine & evergreen trees lining fairways. All necessary equipment to maintain & plenty of shop buildings. Nice Pro-Shop. Located in S.E. Oklahoma, Contact Hassen Dow - 405-326-7459. 7/88

**FOR SALE** - Clearing out new and used Locke Triplex mowers, great buys! **ALSO** some parts. For quotes call 407-683-4238. 7/88

**SPYDERS**—New/Used/Rebuilt. New Kohler engines, short blocks and a complete line of engines and Spyder replacement parts. New Style Nichols-Fairfield Torque Hub Kits, heavy duty Wilton Caster, Hub Kits, Remote Air Cleaner Kits,heavy duty Carriage Side Plates. Call or Write: Mobile Lift Parts, Inc., 5402 Edgewood Rd., Crystal Lake, IL 60012. 815-455-7363. 8/88


# SELECTIVE CONTROL Of Weeds, Brush And Weed Trees!

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Spot treatment cuts labor, materials. Automatic — Adjustable — Accurate.

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**BUCKET TRUCKS,** Straight Stick, Corner Mount and Knuckle Boom Cranes. Brush Chippers - New Morbark Disc Type, New Woodchuck Drum Type. Best prices anywhere. Used Chippers - Asplundh, Woodchuck, etc. 2 to 8 usually in stock. Sprayers, Dumps, Stakes, Log Loaders, Crew Cab Chip Box Dumps, Railroad Trucks, 50 in stock. Sold as is or reconditioned. Opdyke's, Hatfield (Philadelphia Area) 215-721-4444. TF

Sod cutter, used once—Ryan heavy-duty commercial type with automatic shut off. Cost $5,650 new, will sell for $3,000 cash. Drill seater, Tye pasture pleaser, 7 ft. wide with 3 hoppers. Excellent condition. Call Robert Bingham 702-786-5426. 7/88

**NEW AND USED EQUIPMENT**—Asplundh, Hi Ranger and Lift-all forestry bucket trucks, Chipmore wood chippers. Mirk, Inc., (216) 669-3567, (216) 669-3562, 7629 Chippewa Road, Orrville, Ohio 44667. TF

**BUCKET TRUCK:** Hi Ranger 65′, 57′, 50′. Skyworkers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers. Bean 55 gal. sprayers. Pete Mainka Enterprises, 633 Cecilia Drive, Pewaukee, WI 53072. 414-691-4306. TF

# "Now is not the time to go it alone."

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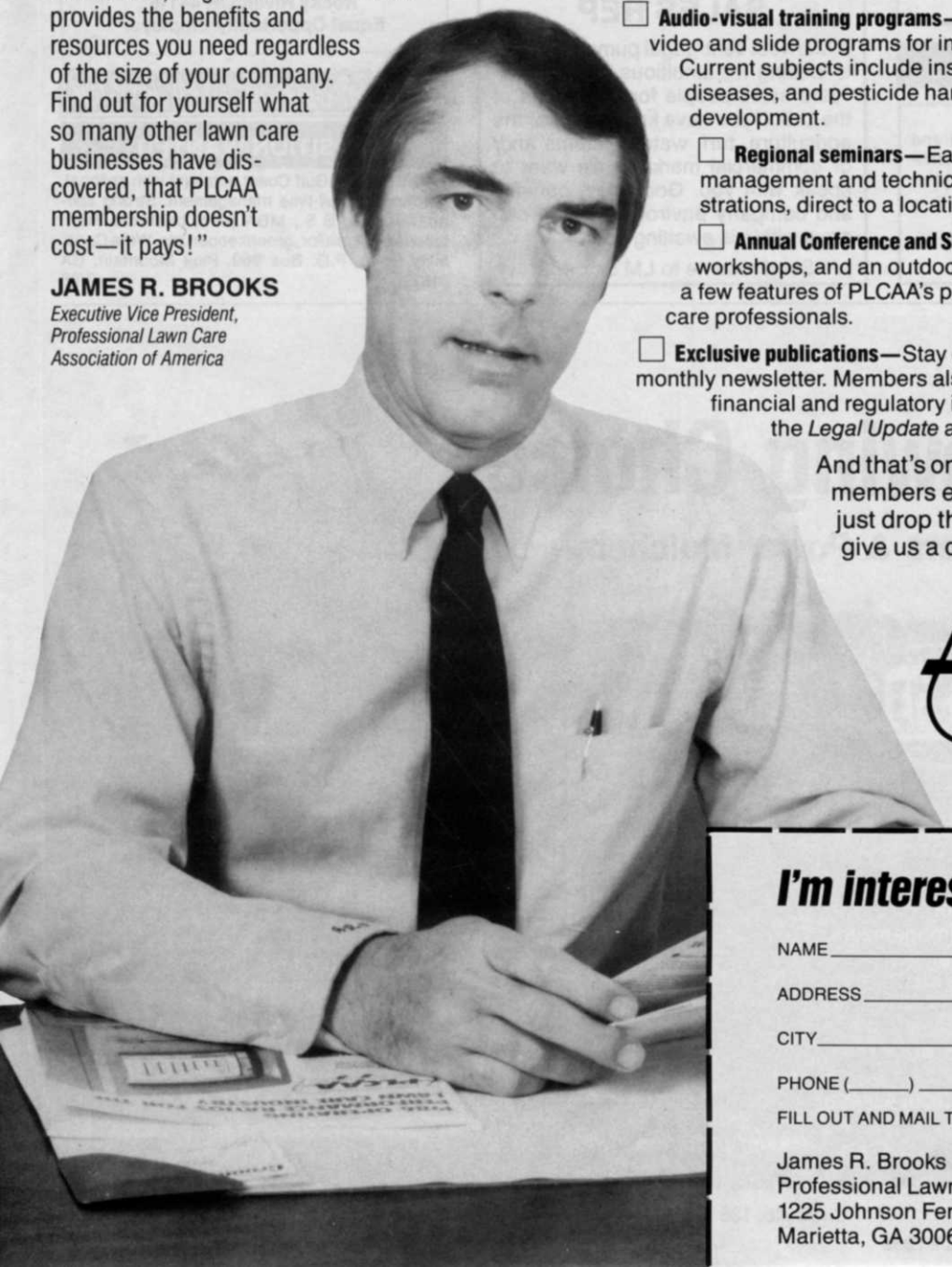
**JAMES R. BROOKS**
*Executive Vice President, Professional Lawn Care Association of America*



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☐ **PLCAA Safety Manual**—A step-by-step guide for training applicators and technicians.

☐ **Management Monograph Publications**—Booklets that cover critical business subjects like getting a loan, developing a marketing plan, hiring and firing practices, and more.

☐ **Group insurance and health care**—PLCAA offers health and life insurance plans for companies with as few as two employees—and at attractive group rates.

☐ **Collection services**—A results-producing collection service to help members with slow-paying accounts.

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☐ **Regional seminars**—Each year PLCAA brings the latest in management and technical training, plus equipment demonstrations, direct to a location near you.

☐ **Annual Conference and Show**—Exhibits, educational sessions, workshops, and an outdoor equipment demonstration are just a few features of PLCAA's popular annual gathering of lawn care professionals.

☐ **Exclusive publications**—Stay current with *Turf Talks,* PLCAA's bimonthly newsletter. Members also keep in touch with tax, labor, financial and regulatory information through our periodicals, the *Legal Update* and *Environmental Update* bulletins.

And that's only part of the advantages PLCAA members enjoy. If you want to know more, just drop the coupon below in the mail, or give us a call at toll-free **1-800-458-3466.**

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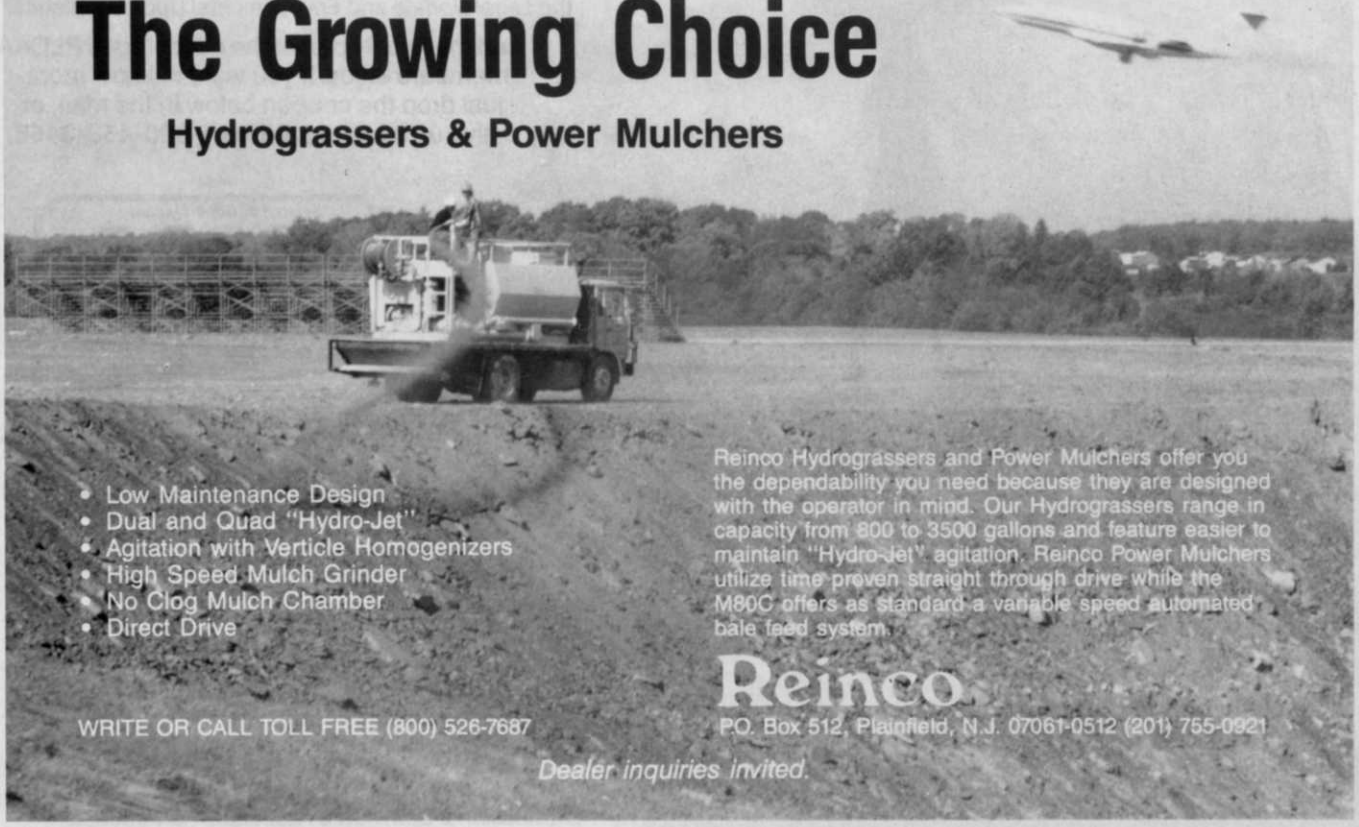

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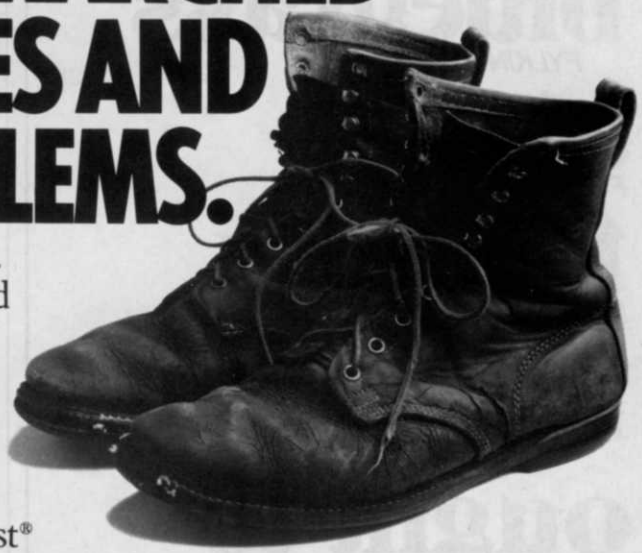
# BEFORE WE DEVELOPED THESE PROBLEM-SOLVING TURFGRASS MIXTURES, WE MARCHED THROUGH ACRES AND ACRES OF PROBLEMS.



Nobody knows the troubles we've seen.

Our Northrup King turf specialists and researchers have hoofed through salt problems, soil compaction, disease, starved turf, baked turf, cleated-to-shreds turf, and dormant winter turf—all depressing sights. But it was a road well worth our travels.

The result is a complete line of Medalist® turfgrass formulas that meet the demands of the professional turf manager.

If you've been staring down at a turf problem, look up your solution here. And if you think it's a turf problem we haven't seen, just let us know.

Our business is putting your problems behind us.

MEDALIST TURF PRODUCTS ™

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| Boulevard Mix | Any area with high pH (roadsides, sidewalks, boulevards, alkaline soils, etc.). | Contains 'Fults' and Dawson red fescue for beautiful salt-tolerant turf. Performs at low to high fertility levels. |
| Landscape Pro Mix | School grounds, cemeteries, golf course roughs, home lawns. | Establishes fast. Adapts to broad range of conditions and management levels. Low to moderate fertility needs. |
| Overseeder II Mix | Fairways, tees, athletic fields. | Rapid germination and establishment. Withstands heavy traffic and resists diseases. Penetrates compacted soils. |
| Medalist North Mix | Fairways, tees, cart paths, wear areas. | Quality turf for high traffic areas. Clean mowing and disease resistant. |
| Premium Sod Blend | Commercial sod production. | Exceptional dark green color. Tolerates light shade. Superior disease resistance. Rapid sod producer. |
| Renovator Pro Mix | Problem solver for heavy traffic areas (athletic fields, golf tees, and fairways). | Penetrates compacted soils and combats *Poa annua.* Adaptable to most geographic regions. |
| Medalist Brand Overseeding Products | Winter overseeding of dormant bermudagrass. | Establishes rapidly and evenly. Tolerates traffic while providing a superior putting surface. Smooth spring transition. |

*Ask your Northrup King distributor about Medalist Turf Products to solve your turf problems. Or write Northrup King Medalist Turf Products, P.O. Box 959, Minneapolis, MN 55440.*

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**To find an**
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Compare Fylking's competitive price and advantages! Fylking forms a thick, lush turf that has improved disease and drought resistance. Fylking greens up earlier, stays green longer; can be cut as low as ¾ inch—even ½ inch. Fylking has been proven over many years of international turf testing.

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**KENTUCKY BLUEGRASS**
U.S. Plant Patent 2887

*Another fine, quality controlled product of Jacklin Seed Company*

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Summertime. It's either deluge or drought. A thunderstorm may dump several inches of rain in minutes...you may not see another drop for weeks. AQUA-GRO® soil wetting agents help you maintain peak turf quality–despite summer weather extremes. And it saves you time and money by making the most efficient use of available water.

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# A fairy tale? Not hardly

Once upon a time, a young baby-boomer decided to go into business for himself. Lo and behold, this insightful youngster—he was barely out of college—chose landscaping, after conducting his own extensive market research.

He liked to be out-of-doors, he liked dealing with clients on a one-to-one basis. Sure, the hours were long and tough; walking a landscape with a string trimmer in hand or sitting on a mower for hours on end is not easy.

But this particular youngster liked the freedom of having his own landscape maintenance business.

By and by, the business began to grow. His reputation spread. He was getting phone calls from people he didn't know. Finally, working 18-hour days, he figured that it was time to add staff.

A few years later, 20 people were on the payroll. The recession was upon the country, but it seemed to have little effect on his business. While other small businessmen were throwing in the towel, his business was thriving in a relatively new "industry."

Not much later, this particular fellow—who was no longer young, but nearer the big four-oh—decided expansion was again necessary. A lot of big bucks, he thought, awaited the landscape design/build company that could afford the expensive heavy equipment and design staff. He spent many an hour burning the midnight oil before determining that he *could* afford the capital investment. His company became full-service: design, build, maintain (including pesticide applications and mowing).

The business flourished. This baby-boomer had made it.

**Moral:** Landscape contracting is about to enter another, more mature stage as baby-boomers' maintenance companies become full-service companies. The old line between design/build and maintenance is graying. Smart, energetic landscape managers with the proper resources might consider diversifying into design/build.

**The end.**

Jerry Roche

**Jerry Roche,** editor


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Nassau is a hybrid variety (P-59 X Baron) developed by Dr. C. Reed Funk of Rutgers University.

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